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Innovative Teaching: Understanding  
and Expanding Innovation

A Report on the Innovative Teachers Forum

2007 EDITION





## Innovative Teaching: Understanding and Expanding Innovation

### A Report on the 2007 Microsoft Worldwide Innovative Teachers Forum

January 2008

*"In the event of an emergency, teachers should put their oxygen masks on first and then help others."*

*—Irmeli Halinen, Head of Preschool and Basic Education Development,  
Finnish National Board of Education*

What does Halinen's paraphrase of an airline safety speech have to do with innovation or an innovative teachers' forum? The relationship can be explained in just one word: respect. The fact that one of Finland's leading educators paraphrased this familiar speech for educators attending Microsoft's 2007 Worldwide Innovative Teachers Forum reflects the respect the Finnish people have for their educators. They treat their educators as highly skilled professionals. Why is this?

The Finns value education and respect educators because they recognize the contribution teachers have made to Finland's success. Finnish students consistently lead the world on the Program for International Student Assessment (PISA) tests that reflects high school students' skills and understanding in math and science and their ability to apply this knowledge. It should not be much of a surprise that Finland is successfully making the transition to a successful knowledge-based economy. Knowledge, skills, creativity, and innovation are critical attributes of a knowledge-based economy. Finnish respect for teachers stems from a recognition of the role educators have played in developing these attributes.

Respect for educators is one of the keys to success in Finland; it is also a key to successful innovation in education. Respect is critical for collaboration among teachers, and collaboration is critical for innovation. The importance of respect was clearly recognized by the organizers and participants in the 2007 Worldwide Innovative Teachers Forum.



In October 2007, 265 educators, ministry officials, and journalists from approximately 50 countries gathered for the 2007 Worldwide Innovative Teachers Forum for three days in Helsinki, Finland to celebrate their successes as innovators and to help each other, and educators around the world, gain a deeper insight into innovative teaching and learning. There may be no better way to demonstrate respect than to celebrate success. From the opening reception to the closing awards dinner, the entire event was designed to recognize the contributions of this remarkable group of educators. Anybody entering the conference facility would realize the focus of the forum was respect for the work of these innovative teachers. As you walked into the facility, the first thing you saw was classroom projects being presented by eighty-seven innovative educators. Their innovative classroom learning activities were the centerpiece of the forum and all of its activities.

### What is Innovative Learning?

#### What are the characteristics of innovative classroom learning activities?

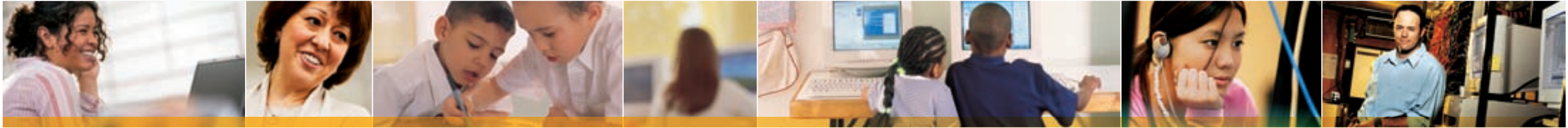
Defining innovation in a meaningful, concrete way is difficult. Peter Drucker, an internationally recognized business expert, defines innovation as “a change that creates a new dimension of performance.” David Hargreaves, one of the UK’s leaders in educational innovation, tells us that “The most simple definition ... is that innovation or knowledge creation means that practitioners learn to do things differently in order to do them better.” (Hargreaves, 2003, p. 27) Hargreaves’ definition is more meaningful to educators, but the definition of innovation still remains illusive.

Educators at the 2006 Worldwide Innovative Teachers Forum grappled with the task of defining innovation in education and offered a more detailed explanation. They focused on the attributes of innovative school environments and innovative educators, but their most valuable contribution to the participants of the 2007 forum was their definition of innovation in teaching and learning. (You will find the 2006 forum “Keys to Innovation” at the end of this report. The full forum report is found at: [http://download.microsoft.com/download/2/5/9/259f7395-bd6a-45d0-bbe2-cb7cbc3e16a7/Innovative\\_Teachers\\_2006.pdf](http://download.microsoft.com/download/2/5/9/259f7395-bd6a-45d0-bbe2-cb7cbc3e16a7/Innovative_Teachers_2006.pdf).)

Participants in the 2006 forum believed innovative learning should include the following attributes:

- Educators use methods that ensure success for all learners;
- Educators implement a data-driven curriculum designed to improve instruction;
- There are high expectations for achievement;
- Learners can clearly articulate instructional outcomes and assessment procedures;
- Learners provide input on assessment standards and can clearly articulate the assessment procedures for activities;
- Learner feedback is encouraged;
- Multiple forms of feedback is provided to learners for further improvement;
- Learners are willing to take initiative to solve problems;
- Learners are actively engaged in authentic, meaningful tasks that develop critical thinking and problem solving skills within the context of their lives;
- Student peer learning, such as in an open discussion, is encouraged;
- Learners have access to accurate and reliable information resources (print and non-print)
- Learners display pleasure in learning;
- Learners have access to multiple audiences;
- Information and communication technologies is one type of many tools used by learners and teachers.

Teachers who use these attributes of innovative education can produce powerful learning activities. A quick overview of four of the projects created and shared by educators participating in the 2007 forum give us a clearer picture of what these attributes look like when put into practice in a classroom learning activity.



### Pay More Attention to Sandstorms: Voices of Students from the Wind Bank of the World

Imagine life on the edge of the Gobi Desert. Each winter and spring the “world’s wind bank” generates massive sandstorms. Your home and your entire community are blanketed by huge sandstorms. Water and power systems are knocked out. Agriculture and industry suffer massive damages. What can you do to understand the problem, and what solutions can you propose? This was the challenge four teachers put to 15-17 year old secondary schools students who live through devastating sandstorms each year.

Working in teams, students were asked to gather information about the causes and frequency of sandstorms from the Web. They used resources such as satellite imagery to learn about topography and land utilization. They visited the desert to gain first-hand knowledge of the problems created by unregulated settlements, farming, and logging. They also gathered information about the origins of sandstorms, their impact, and possible solutions by videotaping interviews of faculty from

various departments in their school. Students were developing skills in the content areas of geography, geology, meteorology, persuasive writing, and Information and Communication Technology (ICT) literacy. They were also developing 21st Century skills such as critical thinking, problem solving and teamwork.

After using a variety of resources to gather information on weather, topography, and land utilization, the students prepared to demonstrate their knowledge, and the critical thinking skills they developed, by creating action plans designed to minimize the threat of sandstorms. Teams of students then wove the video footage of interviews, and other information they gathered into video documentaries. To produce the documentaries they relied on the help of a fellow student who had video editing skills using Microsoft Movie Maker. Another student used his Microsoft FrontPage skills to create templates that helped the teams create Web pages to document their findings and share their solutions.

### Don Quixote: Impossible Dreamers

Don Quixote was a dreamer, and educators in one school used their elementary students’ fascination with his story to develop a deeper understanding of this wonderful piece of literature and science. Yes, science! As they read and discussed the novel, students and their teachers worked to identify characters and events that could be animated. This was not the typical animation one might expect from elementary school students. There weren’t any crayons. These students animated the story with robots they created.

The educators who shaped this project placed their students into mixed-ability teams. The Giant Killers were responsible for designing, building, recording, and presenting robotic animation of Don Quixote and Sancho Panza attacking the windmill. The Millers researched the history of windmills; then put this knowledge to work by designing, building and animating working models of a mill. The Generators were responsible for researching the modern application of windmills—wind turbines, and exploring solar energy. To dem-

onstrate their learning, they built a model wind turbine.

As they worked, students had numerous opportunities to present their work to real world audiences and get feedback. They not only presented projects at parents’ night, they also demonstrated their work at the Young Scientists and Technology Exhibitions. All teams were responsible for involving primary students in the project, and helping them learn more about science. One group led a hands-on experiment that encouraged four and five year old students to speculate on how the sun could produce the energy needed to power a fan. As you might imagine, the results at times were hilarious. Finally, students showed off their finished projects at the Empowering Minds Robo Show. The parents might have been a bit biased, but those interviewed by the students and teachers were amazed at what their students had learned and their ability to explain difficult scientific concepts in a clear, confident way.



## Biodiversity

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Students working on the Biodiversity project were given the following scenario:

*Development has pushed the Lemurs of Madagascar to the brink of extinction. Your school has a long standing interest in wildlife and its preservation. There are over 1,200 animals from roughly 100 species on your school campus. When you learn about the Lemurs, you are concerned, but you live thousands of kilometers from the only home of wild Lemurs. What will you do?*

One educator arranged an online collaboration with students living in Madagascar, and together the students developed possible solutions to prevent the extinction of Lemurs.

The upper secondary students and educators participating in this project faced a number of challenges as they started to work together. It is easy to say students in northern Europe will collaborate online with students in Madagascar, but what if one of the schools lacks basic technology infrastructure? Educators and students used ICT resources they knew would work. Much of the communication utilized low bandwidth tools like Instant Messenger. Teachers in each country wanted to participate in professional learning together. Again, they found a low tech

solution to overcome barriers: cell phones were used instead of video conferencing or online learning management systems.

The resourcefulness of the students and teachers produced results. During the first year of the project, students collaborated to research the problem and develop solutions. They quickly learned that the solutions wouldn't be easy. To have any chance of success, the students' solutions would have to balance the needs for development with those of the wildlife of the island. In the second year, the students invited authorities, people from the business community, and other international partners to a seminar they developed on "Sustainable Development and Biodiversity." At the seminar, the students used Microsoft PowerPoint or Photo Story to present their findings and get feedback from participants. Today, students from the two schools originally involved in the project continue to work together. The teachers who created this project were so moved by the results of the collaboration, they are currently in the first stages of helping other schools around the world use this model to implement their own collaborative projects.

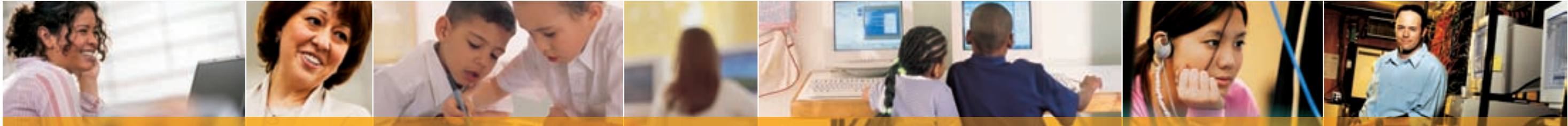
## CSI: Creative Science Investigations

07

Chromatography. Not exactly a word that would excite eleven and twelve year old students they walked into their classroom, saw the taped outline of a body on the floor, and the police tape that cordoned off the crime scene. As they entered, their teacher handed them rubber gloves, a lab coat, goggles, and cameras and told them they would carry out a chromatographic investigation that will help them solve the crime. Then the fun began.

The perpetrator left evidence in the form of a handwritten note. Following a carefully structured series of experiments outlined by their teachers, students learned the scientific techniques necessary to carry out experiments and "solve" the crime. These Chromatographic experiments helped students separate the ink mixture in the evidence into its constituent elements, and compare the "evidence" to ink in pens collected from possible perpetrators. After completing their experiments, the learners used Microsoft Word to write up their forensic reports. Their teachers provided some scaffolding to learning in the form of sentence starters.

The teams of young Creative Science Investigators produced Microsoft PowerPoint presentations or documentaries and news stories using Microsoft Photo Story to explain the results of their investigation. The students' sense of excitement is palpable to anyone viewing their work. While the instructional focus of CSI was science, the students' presentations also reflect a real mastery of persuasive writing. Their use of voice and details was so finely polished the innovative educators viewing their videos at the forum could not help but smile. The students were motivated, engaged in their learning, and their work clearly demonstrated what they had learned.



### Innovative Learning Characteristics

Earlier we reviewed some of the attributes of innovative learning activities. A second look at these traits will give us a better picture of how the four learning activities you just read about reflect the attributes of innovative education.

The four learning activities described above and the other sixty-five projects presented at the 2007 Worldwide Innovative Teachers Forum, share basic characteristics: rigor, relevance, fun, and ICT.

The projects help students develop traditional content skills in writing and math, but they also help students develop 21st Century skills. In the “Sandstorm” and “Biodiversity” projects, students are asked to develop a solution that balances economic development with the needs of the environment endangered by economic development. These students are involved in **rigorous** learning.

The learning activities are **relevant** to the students. Clearly this is the case with students who face sandstorms several times a year. It is also true for the elementary students participating in a “Bacteria” learning project presented at the forum. Their task was to determine how bacteria shape their lives. Why is relevance innovative? If you ask any of the innovative educators who attend this forum they will tell you. Projects and activities that have meaning in students’ lives produce more active learning. Simply put; students are more motivated to learn.

If you viewed the videos of the students involved in “CSI”, you would know the students were having **fun** while learning. Learners in the “Bacteria” project were asked to create short videos to share their findings with other students. In this case, **fun** motivated the students, to pour real effort into their projects. While the “Bacteria” project videos make you want to immediately wash your hands, they also gave the students an opportunity to demonstrate a deep, sometimes stomach-churning, understanding of the relationship between bacteria and health. Clearly, **fun** can be a powerful key to innovative learning.

Characteristics of Innovative Learning*	Sandstorm	Don Quixote	Biodiversity	CSI
Educators use methods that ensure success for all learners	•	•	•	•
Educators implement a data-driven curriculum designed to improve instruction				
There are high expectations for achievement	•	•	•	•
Learners can clearly articulate instructional outcomes and assessment procedures	•	•	•	•
Learners provide input on assessment standards and can clearly articulate the assessment procedures for activities				
Learner feedback is encouraged				
Multiple forms of feedback are provided to learners for further improvement	•	•	•	•
Learners are willing to take initiative to solve problems	•	•	•	•
Learners are actively engaged in authentic, meaningful tasks that develop critical thinking and problem solving skills within the context of their lives	•	•	•	•
Student peer learning, such as in an open discussion, is encouraged	•	•	•	•
Learners have access to accurate and reliable information resources (print and non-print)	•	•	•	•
Learners display pleasure in learning	•	•	•	•
Learners have access to multiple audiences	•	•	•	•
Information and communication technologies are one type of many tools used by learners and teachers	•	•	•	•

\* The attributes of each learning activity were derived from a review of learning activity planning materials, evidence of student learning supplied with the learning activity plans, and in some cases brief conversations with the teachers who created the activities. The learning activities may address other “Keys of Innovation,” but the authors of this report did not have enough information to make that determination.



Finally, in each of these projects, **learning was enhanced through the use of ICT**. Students accessed up-to-date, meaningful resources using ICT. They analyzed and synthesized the data, presented their findings to others, and got feedback using technology tools. One educator at the 2007 forum understood the power of ICT, and demonstrated incredible innovation to bring ICT to his students. Fewer than 20% of his students had access to educational CT; leaving more than 80% of his students on the wrong side of the digital divide. To address this inequity, he reworked part of the mathematics curriculum for high school students to make activities accessible to students on one technology they all had—cell phones. With the aid of a free cell phone browser, students can now access and participate in mathematics class learning activities anywhere, anytime.

To gain a broader understanding of the projects described in this article and view the other projects presented by the innovative educators assembled at the 2007 forum, visit to the Innovative Teachers Web site. Follow these steps to access the projects:

- Access the Web site at: <http://pil.innovativeteachers.com/>
- Join the site
- Click the “Communities” tab at the top of the page
- Click on the “WW Innovative Teachers Forum 2007” link
- Click on the link to VCTs to review detailed descriptions of the learning activities presented by many of the educators who participated in the forum

## Adapting and Adopting Innovative Learning Activities

**How do we help other teachers utilize innovative learning activities developed by others?** One major activity of the 2007 Worldwide Innovative Teachers Forum focused the educators’ discussion on how to make innovation more systemic. International teams of educators initially examined an innovative project presented at the forum and used the “Keys to Innovation” tool to explore how and why the project was innovative. Next, the same teams considered how they would adapt these projects for their use in their own classrooms and what would need to be done to assist other teachers in their schools to adopt these projects. This challenge was close to the hearts of these innovators.

Even a quick review of these teachers’ work suggests they are offering students incredibly strong learning experiences. Yet, virtually every educator participating in the discussion reported that their innovative practices had not been adopted by other educators, not even by colleagues in their schools. Their work may be remarkably innovative, but it is also remarkably insular. Too often, innovation in education exists in isolated pockets of excellence. Exploring why innovative has not spread more widely is important to understanding how to make innovation systemic.

One commonly followed avenue to systemic innovation relies heavily on externally imposed innovation. We all are familiar with this model; schools appear to be failing to prepare students for their future and both educators and politicians begin to talk about the long-term impacts these failures will have on the economy and society. Crises, or perceived crises, produce proscribed solutions. Educational leaders, often distant from schools and classrooms, devise or adopt a solution and mandate its implementation. Innovation arrives at the school door in the form of new textbook adoptions, new curriculum, or academic publications. Each teacher is expected, and often required, to take the “innovation” and implement it exactly as prescribed in



their classroom. At its heart, externally mandated reform relies on a rubber stamp approach to duplicate innovation throughout each classroom and each school.

The impact of the external impositions to propagate innovation has been singularly unimpressive. Researchers who examined the impact of innovation in several countries found that after more than a century of attempts, "Very few innovations actually bring about changes in daily school life ..." (Van den Berg, Vandenberghe & Slegers, 1999, p. 326). In the current atmosphere where education has become more and more a political issue, and political demands for change have led educational leaders to introduce innovations designed as a remedy, it is critical to understand why this approach to systemic innovation has failed and will continue to fail.

Bill Mulford has studied innovation in several countries and he concluded that externally imposed reforms, "no matter how well conceptualized, powerfully sponsored, brilliantly structured or closely audited, are likely to fail in the face of cultural resistance from those in schools." (Mulford, 2003, p. 5). It would be erroneous to read "cultural resistance" as some sort of active or coordinated opposition to innovation. Resistance is a by-product of educational leaders' failure to recognize the critical role educators play in fostering innovation and failure to do what is necessary to help these educators adapt and adopt innovative practices. When innovation is imposed on schools, it fails at least in part because, "Teachers appear to fall by the wayside" (Van den Berg, Vandenberghe & Slegers, 1999, p. 326). Too often, teachers' needs, interests, and perceptions are ignored by the leaders who are proposing, or mandating innovation. (Van den Berg, Vandenberghe & Slegers, 1999).

"Improving practices can only be done *by* teachers not *to* teachers."

(Wurtzel, 2007, p. 30)

**Why is it critical to involve teachers if we want systemic innovation?** Increasingly, innovative educators and researchers are coming to understand the weaknesses of top down, externally imposed innovation, and beginning to articulate an effective alternative. Innovations imposed on schools diminish or eliminate one of the critical "Keys" to successful innovation: respect. In Finland, respect for educators means that schools are given autonomy and educators are encouraged to unleash their creativity. By contrast, the rubber stamp approach, according to one recent study, "impinges on teachers' professionalism" (Wurtzel, 2007, p. 30). When looking at externally imposed reforms, one critic of the approach observed that it, "[C]hanged teachers to technicians rather than respecting them as creative professionals" (Hargreaves, 2003, p. 57). In this model, educators are more like a cog in an assembly line, not a partner in efforts to foster innovation.

Successful innovation is more likely, Mulford (2003) argues, "[W]here people act rather than always reacting, are empowered, involved in decisions making ... and are trusted, respect, encouraged and valued." (p. 2-3.) Successful innovation, Kruse, Louis & Bryk (1994) insist, means that schools "... must empower teachers for students and teachers to benefit" (p. 3). What is the benefit of empowering teachers? The innovative teachers gathered in Finland made it clear that teachers are the heart of any successful effort to make innovation systemic.

**If teachers are the key to systemic innovation, what issues do we need to address to help them be successful?** According to the innovative educators who participated in the 2007 forum the following areas need to be addressed:



**Teachers need a reason to adopt innovation.** The innovative educators who attended the 2007 forum were unanimous on one point: without a compelling rationale, teachers will not take the time or expend the effort necessary to adopt an innovative practice. They had some clear advice for how to create the reason or rationale.

- “Listen to them and find out how the innovative project will suit the needs of their students.”
- “Help them see how it will improve outcomes for their students.”
- “It is important to show teachers interested in a new project the value of learners doing such an activity.”
- “The program being adopted must support the curriculum.”
- “Possibly allow them to see/discuss with other educators who have successfully implemented the innovative activity.”
- “Encourage them to follow their heart ...”
- “Make sure they buy into the idea ... not forced into it.”
- “Explain where it touched the curriculum.”
- “Explain how it motivates kids.”
- “Explain its advantages.”

As innovators, some of the forum educators observed that students could play a powerful role in this process by providing a rationale and motivation for adopting innovation. As one innovative teacher stated, hearing from or observing students can influence teachers’ practices, *“I’ll choose to use ‘students’—our customers—as the ‘weapon.’ I’ll ... let the students’ performances prove the need of the innovations. Besides, try to make students’ voices heard. That is, students said, ‘they need it!’”*

Using students to encourage other educators to adopt innovation is a proven strategy—just ask the innovative educators who shared their *ExcelElections* project at the 2007 forum about the power of students can have in spreading innovation. Students who used an Microsoft Excel-based voting system to select their student council had so much fun while learning about the candidates and the electoral process that they recognized the value of ICT in learning and school administrators reopened a closed computer lab. The students were so excited about participating in *ExcelElections*, they told their friends. Soon educators from nearby schools were calling the school that created this innovative project asking how to replicate it.

This brief discussion of how to encourage teachers to adopt innovation gives us two insights into the process. First, innovation is a teacher driven process. It relies on teachers listening to each other and to students, sharing, seeing, and discussing teaching practices. Secondly, since this type of teacher communication and collaboration does not occur without respect, it should become apparent that respect is at the heart of the process.

**Teachers will weigh the cost of adopting the innovation.** At the same time educators are considering a motive or rationale for adopting innovative practices, they will also be considering the cost of adopting it. They will be asking, how practical is the innovation? Teachers will want to know how it aligns with their current teaching/learning philosophy. Finally, teachers will compare the benefits for students to the costs to themselves. How much time and effort are required to implement that curricular change? (Leuhmann, 2002).

The innovative educators at the 2007 forum demonstrated an understanding of the need to address the issue of “costs” of adoption. For example, they noted that they would think about the following when adopting an innovation:



- “Support them ... by giving them opportunities to discuss with you (or others) what is needed to implement the project.”
- “Extract the key principles of the innovative practice so that teachers can see slowly the approaches to be adopted and the impacts on learning.”
- “Start small.”
- “Bring them along slowly.”
- “Don’t push too hard.”

Recent research also provides some answers that help address the issue of “cost” more effectively. David Hargreaves (2003) has spent years studying systemic innovation. He argues that a “best practice” is one that works or is effective at reaching its educational goals. The best practices innovators should focus on sharing are those that are effective at reaching goals **and** have “high leverage and high transferability” His definitions are important for innovative educators. Hargreaves states that high leverage means the innovative practice should have broad appeal to a large number of educators. Projects that focus on writing skills that could be used by teachers in a variety of content areas. In addition, high leverage means that adopting the practice should require only a small amount of energy from the teachers adopting them. Innovative practices should help teachers “[W]ork smarter not work harder” (p. 46).

What is a highly transferable innovation? Other educators need to see that the learning activity could be easily adopted to help them address their perceived needs. An innovation that is highly transferable would also be appealing to practitioners in other settings. Teachers in an inner city school need to see the value in adopting a practice created by educators in a rural setting (Hargreaves, 2003).

Respect is a key part of the “costs” equation. The 2007 forum innovative teachers support Hargreaves’ idea that there are clear limits on teachers’ time and energy. Their suggestions to help teachers minimize the cost of adopting innovation are based on respect, whether it is “starting small” and discussing what is needed to implement the project, or focusing on those innovations that have high leverage and high transferability.

**Teachers are more likely to adopt an innovation when it is proposed by a respected source.** With the advent of the Internet, many schools and other educational organizations have adopted another approach to innovation. They post innovative learning activities on their Web site with the expectation that this type of digital sharing will enrich education. This approach is clearly more respectful than a top down, externally mandated innovation, but it, too, falls short of recognizing teachers’ needs. These “best practice” Web sites are premised on the notion that the simple act of posting a best practices means teachers will use it.

This rarely happens in practice. As Hargreaves argues, even on the strongest of the best practice Web pages, it is hard to gather enough information about the context in which the best practice was created and implemented. Teachers are much more likely to listen to a peer who champions innovation. When a peer encourages innovation, their colleagues know they are recommending a practice that works with their students in their school setting. In other words, it is an innovation that works in their context. For innovation to spread from classroom to classroom, peers need to be more than champions.

Reviewing the comments of the 2007 forum innovative educators gives us an insight into a potential answer about why best practice Web sites, even sites that have champions have not produced the desired results. Time after time these educators talk



about what is necessary to encourage innovation with sentences that include terms like, "I will show," "I will demonstrate," "I will listen," "We will discuss," "I will help," "I will encourage." What is the common denominator in all of these statements?

These innovative educators' statements reflect their understanding that the best way to spread innovative practices is through peers who already have the respect and trust of their colleagues. This is critical. Before they adopt another educator's work, teachers want to know that the source of innovation is competent, knowledgeable, and trustworthy (Luehmann, 2002). The competence, knowledge, and trustworthiness of best practices are hard to ascertain from a Web site, but everyone knows teachers in their school who embody those qualities.

**Teachers will need to adapt innovation.** As teachers consider whether to adopt an innovative practice and the "cost" of making that adoption, they think about how they will have to adapt the work to make it fit in their classrooms. Three comments from the discussion among the 2007 forum innovative teachers reflect this reality and the role they felt they needed to take in the process of adaptation.

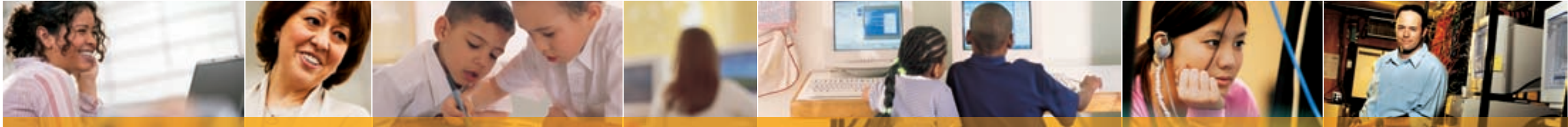
- One group of educators noted that they would, "Reassure them [other teachers] that not all activities need to be done and that they can be changed/adopted and adapted for their own purpose and context."
- A second group reminded us that we could be more successful by helping other educators, "Contextualize the learning experience to meet the teacher's specific needs, just like teachers do when teaching a class. The new learning project should make sense from the start, without letting the new teacher struggle and guess."

- A third group recommended it is essential to, "Leave room for adaptations: leave choices, room for creativity, use different technologies available."

What can we learn from these educators' observations? Innovators must recognize that teachers will want to adapt any innovative practices they plan to adopt. As the authors of a study on the utilization of an extremely innovative science project concluded, "The process of dissemination is not simply rubber stamping the same program into multiple contexts, rather, the process of large scale adoption involves additional, individual teacher-directed design, fitting, and adaptation of local circumstances." (Barab & Luehmann, 2003, p. 464). In short, teachers must adapt the curriculum for local use.

While our 2007 forum innovative teachers and researchers may not have explicitly stated it, respect is implicit in their discussion about how to secure teachers' buy-in for innovation, the costs of adopting an innovative practice, the best means of securing teacher support for innovation and the need to adapt innovative activities for successful implementation. At each step in the adopting and adapting processes, both the 2007 forum innovative educators and educational researchers have concluded that educators need to demonstrate respect for educators and engage their skills as professionals for innovation to flourish.

**Teachers are likely to need encouragement, support and assistance to adapt and adopt innovative learning activities.** The 2007 forum innovative teachers' conversation about adoption demonstrates the complexity of successful adoption of an innovative teaching practice. Their conversation also makes it evident that they believe their peers might need the following types of help:



**Provide just enough, just in time, training and resources.**

- “Provide lots of support behind the scenes.”
- “Look for ways to convert people slowly (easy access to ways that help people ‘try new things’ in an unthreatening way.”
- “Support their implementation by giving them opportunities to discuss with you (or others) what is needed to implement the project.”
- “Provide resources”
- “Provide support”
- “Be enthusiastic”
- “Be motivated.”
- “Share resources”
- “Be there for them.”
- “Assure them that help is always available.”
- “See them through the implementation process-till the end.”
- “Listen to their needs and offer knowledge. Not being the one who knows better.”
- “Offer technical support.”

**Collaborate in Planning**

- “I could team up with some teachers to adopt an activity.”
- “Share successful methods.”
- “Share strategies.”

- “Clearly identify outcomes for students and assessment strategies that measure intended outcomes.”
- “... start small, then as they feel comfortable go on and build and expand for more ideas.”
- “Show them how the standards are being met.”
- “Give them something premade so they don’t have to put in the immense amount of time up front on design.”
- “Make sure projects respond to the curriculum.”

**Model or team teach**

- “Find ways to help them observe.”
- “Show good practice — and how fun it can be.”
- “Invite them to co-teach with you on that innovative learning activity.”
- “Find ways to observe the project being taught.”
- “Team teaching.”

**Collaborate to reflect and debrief after an activity**

- “Celebrate small successes.”
- “Need to celebrate the little things in order to encourage more.”
- “After co-teaching an innovative activity, “ask them how they could improve on the design and delivery of that activity.”
- “Review lessons, successes, problems.”



Even a casual review of the types of support teachers need when adopting an innovative practice demonstrates that the process will require close and sustained collaboration among peers. It also indicates that the teachers adopting innovative practices will look to the peer who championed the innovation as a mentor or coach at each step in the process of adaptation and adoption. The vast majority of the teams at the forum who grappled with the question of what is required to help others adapt innovation said they would provide teachers with a peer coach.

The innovative teachers participating in the 2007 forum clearly understand that strong peer coaches provide timely support and assistance, collaborate in planning learning activities, are able to model or team teach a learning activity, and assist in the process of reflecting on the success of a learning activity. In short, a trained peer coach has the communications, collaboration, lesson design and ICT literacy needed to collaborate and be the effective partner teachers need as they adapt and adopt classroom innovations.

There is one other clear reason these innovative teachers focused on the importance of providing peer coaching. When asked about the most critical characteristics of a peer coach, teachers say effective coaches are, "Recognized by staff as a strong teacher, in fact, most probably, an outstanding teacher ..." (Dixon, 2007) In other words, they are a teacher that already has the credibility and the respect of their peers.

Listening to the conversations of the innovative educators and reading their comments on making innovation systematic makes it clear that they believe innovation is something that should engage and involve teachers. Teachers can, and should, often play a leadership role in the process. Innovation is something that should be done **by**, not something that should be done **to** teachers.

As powerful as these feelings may be, the innovative educators who participated in the 2006 and the 2007 forums made it clear that teachers acting alone cannot create truly innovative schools.

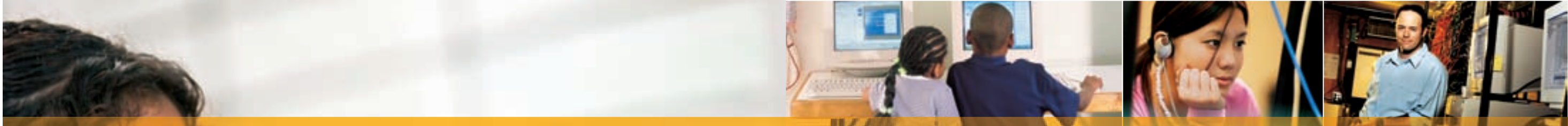
## Innovative Schools

As the educators at the 2007 World Wide Innovative Teachers Forum discussed what was required to help other teachers adopt innovations, much of their conversation focused on issues beyond the doors of their classrooms. Many of them indicated that their school did not have the culture of collaboration needed for innovation to spread from one teacher to the next. As one teacher noted, "It's difficult to get teachers to share anything, or to have confidence in what they are doing in the classroom. Our culture is not to share out." Another group argued it was essential to, "Work with other teachers to develop a culture of trust and mutual respect."

These educators recognized that teachers alone could not produce the sweeping changes needed in the school environment. They argued that to make changes, educators must have the active support and involvement of the school leadership. The innovative educators insisted school leadership must:

- "Recognize and encourage change"
- "Provide support behind the scenes"
- "Promote a culture of sharing"
- "Provide time for planning and observations/debrief"
- "Encourage colleagues to take risks and accept failure as a component of success"
- "Support others who demonstrate innovative approaches ..."

These ideas mirror many of the conclusions drawn by the innovative educators who created the "Keys to Innovation" at the 2006 World Wide Innovative Teachers Forum. (You can find their work at the end of this report.) The innovative teachers who participated in the 2006 or the 2007 forums clearly understand that if we want all teachers to be innovative teachers, every school needs to be an innovative school.



### Resources:

Barab, S. Luehmann, A. (2003). *Building Sustainable Science Curriculum: Acknowledging and Accommodating Location Adaptation*. Retrieved March 25, 2007 from <http://www3.interscience.wiley.com/cgi-bin/abstract/104537630/ABSTRACT?CRETRY=1&SRETRY=0>,

Dixon, B. (2007). *What if Every Child Had a Laptop - and Nothing Changed, Part 2, One to One*, AALF Newsletter. Volume 3, Issue 2.

Hargreaves, D. (2003). *Education Epidemic: Transforming Secondary Schools Through Innovation Networks*. Demo, London. Retrieved, November 1, 2007 from [http://books.google.com/books?hl=en&lr=&id=XdnS6nGXQWcC&oi=fnd&pg=PT6&dq=Hargreaves,+D.+\(2003\).+Education+Epidemic:++Transforming+secondary+schools+through+innovation+networks&ots=kyQSE1b4kn&sig=dCxydc172pvh5dkQhJgjXTDwxQY#PPA1,M1](http://books.google.com/books?hl=en&lr=&id=XdnS6nGXQWcC&oi=fnd&pg=PT6&dq=Hargreaves,+D.+(2003).+Education+Epidemic:++Transforming+secondary+schools+through+innovation+networks&ots=kyQSE1b4kn&sig=dCxydc172pvh5dkQhJgjXTDwxQY#PPA1,M1)

Kruse, S. Louis, K, Bryk, A. (1994). *Building Professional Community in Schools. Issues in Restructuring Schools*. Spring,1994. Retrieved November 15, 2001 from [http://www.wcer.wisc.edu/archive/cors/Issues\\_in\\_Restructuring\\_Schools/ISSUES\\_NO\\_6\\_SPRING\\_1994.pdf](http://www.wcer.wisc.edu/archive/cors/Issues_in_Restructuring_Schools/ISSUES_NO_6_SPRING_1994.pdf)

Luehmann, A. (2002). *Powerful Hidden Forces Affecting Teachers' Appraisal and Adoption of Innovative Technology-Rich Curricular Supports for Secondary Water Quality Learning*. Paper presented to the American Educational Research Association, New Orleans, LA. Retrieved April 1, 2007 from <http://mail.rochester.edu/~lumn/pink/index.htm>

Mulford, B. (2003). *The Role of School Leadership in Attracting and Retaining Teachers and Promoting Innovative Schools and Students*. Commissioned paper by the Review of Teaching and Teacher Education. Canberra: Department of Education, Science and Training. Retrieved March 25, 2007 from [http://www.dest.gov.au/sectors/school\\_education/publications\\_resources/profiles/school\\_leadership.htm](http://www.dest.gov.au/sectors/school_education/publications_resources/profiles/school_leadership.htm)

van den Berg, R., Vandenberghe, R. & Sleegers, P. (1999). *Management of Innovations from a Cultural-Individual Perspective. School Effectiveness and School Improvement, V10*.

Wurtzel, J. (2007). The Professional Personified. *Journal of Staff Development*, Fall 2007.

### Additional Resources

The "Keys to Innovation" chart, which considers personal characteristics of innovative educators, the attributes of innovative classroom learning activities and the traits that need to be in place in the school's environment for innovation to develop and flourish is included in this document.

A quick word about this resource: it was based on the work done by a group of educators gathered from around the world for a two day meeting stemming from their ideas and experiences. The tool was never meant to be an exhaustive list of every "key" to innovation, nor was it meant to be immutable. The educators who contributed to this would certainly encourage those who use the tool to modify it to reflect both their experience and more recent or local research.

## Keys to Innovation Chart

**Keys to Innovation** was developed to capture ideas and themes from innovative teachers across the world and supporting literature on educational innovation. It is NOT a rubric; each cell lists an attribute or characteristic related to innovation in education in one of three categories: innovative classroom environments, innovative school environments, and innovative educators. The chart is not meant to be an exhaustive list of attributes, but rather a place for educators to begin a conversation about innovation in education.

Innovative Classroom Environments	Innovative School Environments	Innovative Educators
Educators use methods that ensure success for all learners	There is a shared understanding and vision for innovation	Have a vision that includes the kind of learning needed to prepare today's learners for their future
Implement a data-driven curriculum designed to improve instruction	Leadership promotes improvement through professional development	Are passionate about teaching and learning
There are high expectations for achievement	Leadership comes from many levels in the school	Are willing to take risks, embrace change, and face difficulties
Learners can clearly articulate instructional outcomes and assessment procedures	Learners' parents are part of the learning community	Are reflective and use analytical skills on a continuous basis
Learners provide input on assessment standards and can clearly articulate the assessment procedures for activities	The school's learning community uses shared vocabulary	Openly continue learning and updating professional knowledge and skills
Learner feedback is encouraged	Sustained professional development is connected with learner success	Are willing to accept and give constructive criticism to learn from peers
Multiple forms of feedback is provided to learners for further improvement	Support of other organizations is welcomed and used in innovative school practices	Integrate information and communication technologies into the teaching and learning environment
Learners are willing to take initiative to solve problems	Sustainable partnerships involve the different school communities	Facilitate learner-centered activities and are willing to let students take a lead
Learners are actively engaged in authentic, meaningful tasks that develop critical thinking and problem solving skills within the context of their lives	Time is provided within the school day for collaboration and school networking	Seek out opportunities for partnerships and collaboration while respecting individual contributions
Student peer learning, such as in an open discussion, is encouraged	Innovation is encouraged and supported with no repercussions for trying new things	Demonstrate an attitude of increased educational effect through a blending of new and old methods
Learners have access to accurate and reliable information resources (print and non-print)	All staff is receptive to implementing ideas from teachers and learners	Effectively manage unplanned or unspecified questions and situations
Learners display pleasure in learning	Innovative ideas are funded	Take initiative and are not afraid of taking risks
Learners have access to multiple audiences		Are open to new ideas
Information and communication technologies is one type of many tools used by learners and teachers		



## The Microsoft Commitment to Innovation

Teachers who participated in the Microsoft Worldwide Innovative Teachers Forum demonstrated that they are forging the future of education. They embrace innovative leadership, teaching, and learning. And they are creating learning environments that are relevant in the 21<sup>st</sup> century.

Teachers are on the frontlines of innovation in education. They are creative, talented, and eager to make education relevant in the 21<sup>st</sup> century. As they experiment with new ways of leading, teaching, and learning, teachers are reflective and insightful about the challenges ahead for education. The Microsoft mission fits well with the mission of education around the world. Our role in education is creating innovative, effective tools that help educators and students imagine and reach their full potentials. Through our global Partners in Learning initiative, Microsoft is taking its long-standing commitment to education to the next level by helping individuals, communities, and nations develop and grow programs that provide access to technology tools and that foster technology skills and innovation. The Microsoft Innovative Teachers program, which is active in 64 countries, is dedicated to:

- Bringing together a community of teachers as learners.
- Facilitating the creation of collective knowledge.
- Creating a platform for the advancement of best practices and adoption of innovation.
- Providing training and access to technology resources.
- Helping teachers develop confidence using technology in the learning process.
- Engaging teachers intellectually and offering them opportunities to be active stakeholders in their profession.



## To Learn More

For more information about the Microsoft Innovative Teachers program, visit [www.microsoft.com/education/innovativeteachers.msp](http://www.microsoft.com/education/innovativeteachers.msp)

For more information about Partners in Learning, visit [www.microsoft.com/partnersinlearning](http://www.microsoft.com/partnersinlearning)

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