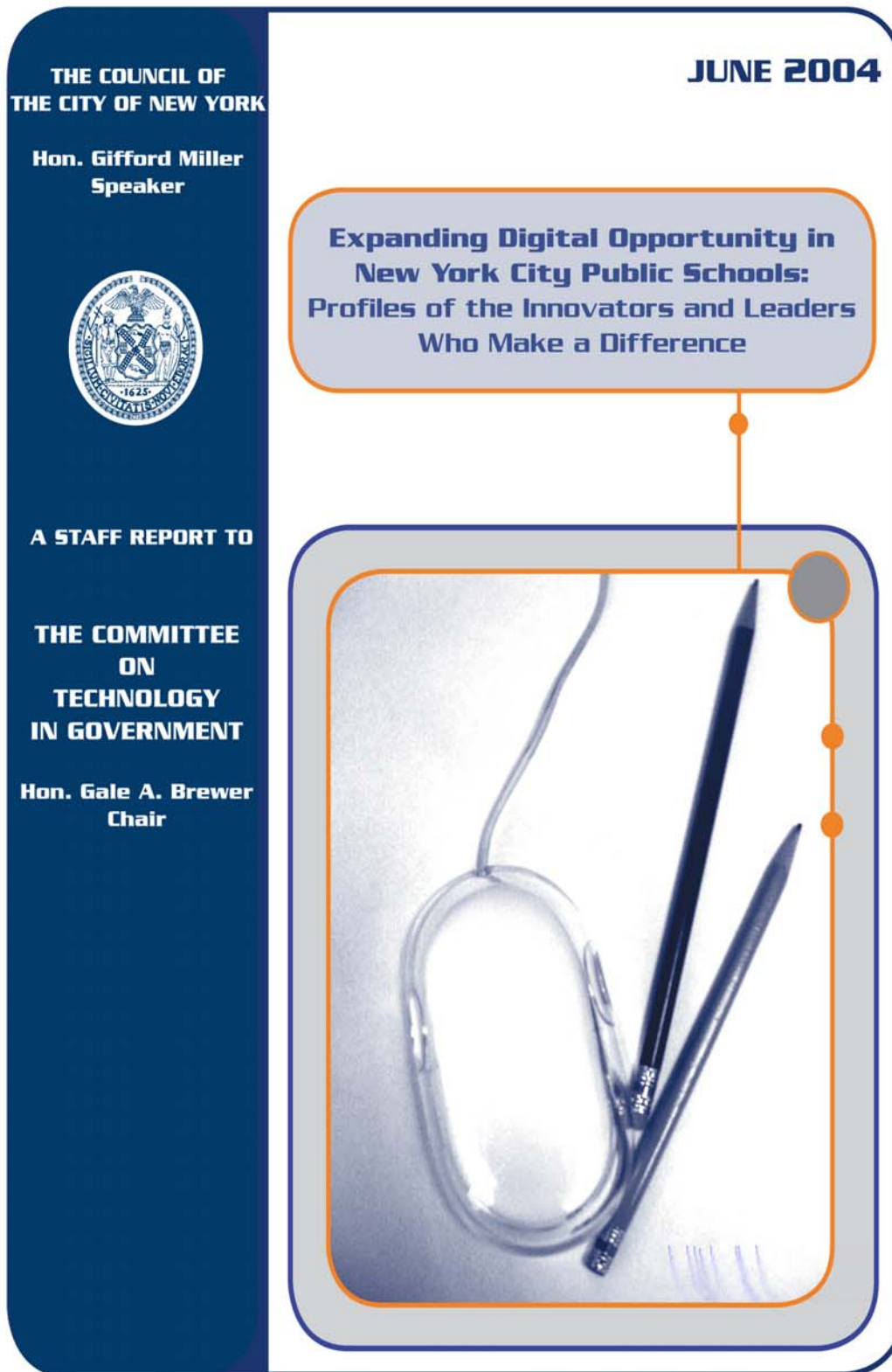


Part I: The Report  
Profiles of Innovators and Leaders Who Make a Difference



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**THE COUNCIL OF THE CITY OF NEW YORK**

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## Introduction

### *About the Committee on Technology in Government*

“Technology is about and for people.”

– Council Member Gale A. Brewer

This assertion drives the work of the Committee on Technology in Government. The Committee believes that the strategic use of technology by and in the government of New York City can help deliver high-quality services to New York City residents. In the end, technology is about improving the economic and social well-being of all New York City residents and making the City as a whole safer and more liveable.

The Committee has a five-point agenda. It is:

- The Expansion of Digital Opportunities;
- The Opening Up of Government;
- The Maintenance of Public Safety;
- The Streamlining of Governmental Services; and
- The Reduction of Waste and Fraud

### *Genesis of “Profiles of Innovators and Leaders Who Make a Difference”*

A priority of the Committee is expanding digital opportunities for public school students in New York City. To that end, on Tuesday October 21, 2003, the then-Select Committee on Technology in Government<sup>1</sup>, chaired by Council Member Gale A. Brewer, convened a roundtable entitled Expanding Digital Opportunity in New York City Public Schools. Participants of the roundtable<sup>2</sup> included innovators from the field of educational technology and leaders from the nonprofit sector, the public sector and the private sector. At the roundtable, the conversation ranged from agreeing on common shared goals regarding technology in education, brainstorming on short-term and long-term strategies and, most importantly, recommending specific actions to be taken by all of the participants of the Roundtable. As a follow-up to the Roundtable, the Committee commissioned a team of Hunter College graduate students to produce a policy report documenting the innovative and effective educational technology programs currently operating in the New York City public schools. The Hunter team talked to executives from the organizations that operate these programs in order to understand in detail

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<sup>1</sup> The Select Committee on Technology in Government of the New York City Council became a standing committee on January 21, 2004.

<sup>2</sup> See Appendix A for a list of roundtable participants.

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what these educational technology programs are and how they work. The Committee also wanted to tap into the expertise, knowledge and vision of the leaders who are the creators and catalysts for these innovative programs. The Hunter Digital Opportunities Team interviewed key executives from each profiled organization to get their thoughts on what needs to be done in the New York City public school system in terms of integrating technology into the educational experience of the children in our public schools.

This report is based on the original work entitled, Technology and Education in New York City: Profiles of Innovators and Leaders, by the Digital Opportunities Team of Hunter College's Graduate Department of Urban Affairs and Planning. The staff of the Committee on Technology in Government did further policy research and analysis. In addition, Committee staff and the Chair of the Committee attended the *Digital Education Leadership Conversation*<sup>3</sup> in Philadelphia, Pennsylvania on March 25 and 26, 2004. During this conference, national experts in educational technology were consulted. Finally, in collaboration with local experts, Bruce Lai, the Policy Analyst for the Committee on Technology in Government, and Council Member Gale A. Brewer wrote and edited the final report.

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<sup>3</sup> For more information about the *Digital Education Leadership Conversation*, please contact Cathilea Robinett, Executive Director of the Center for Digital Education, or Marina Leight, Director of the Center for Digital Education (<http://www.centerdigitaled.com/>).

## Executive Summary

*“The students in the New York City public schools are at a disadvantage because the New York City Department of Education does not have a vision or a strategy for using technology to improve the academic performance of its students. As a result, it is a hodge-podge in the schools regarding available software programs and computers. There are schools that are wireless or outfitted with laptops, but it is better when students, teachers and parents use technology creatively to positively impact teaching and learning. I think as more schools begin to expand their usage and understanding of technology, the caliber of teaching and learning will rise.”<sup>4</sup>*

– Council Member Gale A. Brewer

In a world moving at a dizzying rate of economic, technological, informational, demographic and political change, our children need to be equipped with the lifelong learning skills to achieve economic stability and success. For most children, the public education system is where they gain – or fail to gain – these lifelong learning skills. The Committee on Technology in Government strongly believes that creative, strategic use of technology must be a key component for ensuring that the children in the New York City public schools will be ready to grasp the economic and social opportunities in their future.

In order for the potential of technology to be realized in the New York City public school system, a vision for how technology will help our teachers teach and our children learn must be defined. Without this vision, the benefits of technology will continue to be allocated unequally. A strong vision for using technology for teaching and learning will inform the development of a strategy to make technology work for our children. This strategy must be developed now.

The first part of the report, Part I: The Report, lays out 10 principles for developing a strategy to help teachers teach and to help students learn using technology. The principles are:

1. Judge technology strategies by their contribution to teaching and learning
2. Ensure that all students have continuous access to technology – at school, after school and at home
3. “Wire” all schools with broadband connectivity to support digital content

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<sup>4</sup> Personal communication between Bruce Lai and Council Member Gale Brewer on April 1, 2004.

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4. Establish reliable, comprehensive and on-site technical maintenance and support departments at every school
5. Teach technology as a tool for teaching and learning and as a subject area to every student
6. Provide teachers with extensive professional development in using technology in classroom instruction and in the curriculum
7. Define technology standards for students, teachers and administrators and implement policies and programs to support the achievement of these standards
8. Research best practices, strategies and programs, the state of technology in New York City public schools and the technology needs of important stakeholders, then disseminate this knowledge widely
9. Build grassroots support for technology initiatives through the development of localized web portals for students, parents, teachers and administrators to provide high-quality educational resources and to facilitate communication among all of these groups
10. Dedicate sufficient funding to implement and achieve the technology in education vision and strategy

The second part of this report, entitled Part II: The Profiles, describes 17 organizations and schools in educational technology who today operate programs in the New York City public schools. The New York City Department of Education needs to collaborate with and tap into the expertise of these educational technologists and others like them. The Committee hopes that this report will initiate a very important public conversation about the use of technology in the New York City public schools. The children in our public schools deserve no less.

## Statement of Purpose

Notably absent from the public discourse on the changes happening at the New York City Department of Education is how technology fits into its ambitious agenda for reform. Standardizing the reading and math curriculum, ensuring school safety and improving the basic operations of the school system, particularly during a time of fiscal uncertainty, are all difficult tasks that need the Department's careful and prompt attention. The Committee strongly believes that technology must be a key part of any strategy to improve the public education system in New York City. A public discourse about the use of technology to help teachers teach and kids learn must happen now.

The collective knowledge, wisdom and expertise of the innovators and leaders whose organizations are profiled in this report must be tapped. Representatives from all sectors – public, not-for-profit and the private sector – must be involved in the discourse. Also, the important stakeholders in the public education system, such as parents and teachers, must be consulted throughout the whole policymaking process. Finally and most importantly, the students themselves must be asked what makes sense for them in terms of technology in the schools. During the conversation at the October 2003 technology in education roundtable, Elisabeth Stock, Executive Director of *Computers for Youth*, commented that “the little people” are driving the use of technology in schools and are pushing the teachers and administrators to incorporate technology in the classroom. This sentiment is not surprising because:

*“For many students ... [t]hey connect with their friends via e-mail, instant messaging and chat rooms online; search the Web to explore their interests; express themselves fluently using new media; learn with educational software; play video and computer games in virtual realities; manipulate digital photos; go behind the scenes on DVDs; channel surf on television; and chat on and take photographs with cell phones.”<sup>5</sup>*

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<sup>5</sup> Learning for the 21<sup>st</sup> Century: A Report and MILE Guide for 21<sup>st</sup> Century Skills, page 7, *The Partnership for 21<sup>st</sup> Century Skills*, <http://www.21stcenturyskills.org/>.



## Defining the Need for Change

### *State of Technology in the New York City Public Schools: A Snapshot*

*“Right now, there is little consistency from school to school. Some have computers too outdated to use; others are requesting hundreds of new laptops without really knowing what purpose they will serve ... Some principals don't even have an idea what technology capabilities exist in their schools. Some schools have networks that allow everyone to send e-mail to one another while others rely on making photocopies in order to communicate. Many teachers have better access to technology at home than they do at school.”<sup>6</sup>*

– Laura Forlano, Technology Reporter, *Gotham Gazette.com*

*“There are a few online resources for professional development in content instruction, test preparation, and student assessment available to teachers. But, it seems to me, there is no comprehensive effort to make the vast majority of teachers out there aware of the presence of these resources or how to use them. That's what's really needed... All NYC teachers are entitled to an e-mail account. It's been my experience though, that a very large number are unaware of this resource and its potential value, and a disappointingly low percentage of teachers actually use it.”<sup>7</sup>*

– Mark Gura, Former Director, Office of Instructional Technology  
New York City Department of Education

*“I recently visited a school in my district on the Upper West Side and discovered that there wasn't a working computer in the school. The last computer they got was from Project Connect many years ago; whereas other schools in my district have state-of-the-art computer labs with dynamic integrated curriculums. For example, at PS 166 the parents, students, and teachers have built their own computer network from the ground up, and as a result technology has played a pivotal role in improving academics at the school.”<sup>8</sup>*

– Council Member Gale A. Brewer

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<sup>6</sup> “Technology in the Schools”, Laura Forlano, *Gotham Gazette.com*, March 2004, <http://www.gothamgazette.com/article/tech/20040312/19/912>

<sup>7</sup> E-mail to Bruce Lai from Mark Gura on March 31, 2004.

<sup>8</sup> Personal communication to Bruce Lai from Council Member Gale A. Brewer on March 31, 2004.

### ***Economic Opportunity, Quality of Life and Strength of Our Democracy***

The Partnership for 21<sup>st</sup> Century Skills, a public-private organization led by the U.S. Department of Education and several of the leading technology companies<sup>9</sup>, is one of the organizations taking the lead in advocating for the integration of technology into in the nation's public schools. In its report, Learning for the 21<sup>st</sup> Century: A Report and MILE Guide for 21<sup>st</sup> Century Skills, the Partnership eloquently defined the need for change. The Committee would like to let its words speak for themselves.

#### **The Changing World**

*"Economic, technological, informational, demographic, and political forces have transformed the way people work and live. These changes – and the rate of change – will continue to accelerate. Schools, like businesses, communities and families, must adapt to changing conditions to thrive ... . Today's education system faces irrelevance unless we bridge the gap between how students live and how they learn. Schools are struggling to keep pace with the astonishing rate of change in the students' lives outside of school. Students will spend their adult lives in a multitasking, multifaceted, technology-driven, diverse, vibrant world – and they must arrive equipped to do so. We also must commit to ensuring that all students have equal access to this new technological world, regardless of their economic background."*<sup>10</sup>

#### **The Importance of Public Education**

*"How can we best prepare students to succeed in the 21<sup>st</sup> century? This is a question of paramount importance to America's educators, employers, parents and the public. Our community vibrancy, personal quality of life, economic viability and business competitiveness depend on a well-prepared citizenry and workforce. Public education provides the bedrock from which our national and individual prosperity rise together."*<sup>11</sup>

#### **Economic Opportunity Requires Lifelong Learning Skills**

*"In the 21<sup>st</sup> century, Americans 'need to be better educated to fill new jobs and more flexible to respond to the changing knowledge and skill requirements of existing jobs ... Lifelong skills development must become one of the central pillars of the new economy.' Further, as a recent study indicated, the narrow job*

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<sup>9</sup> Founding members of the Partnership for 21<sup>st</sup> Century Skills include: Apple, Cable in the Classroom, Cisco, Dell, NEA, Microsoft, SAP and Time Warner Foundation.

<sup>10</sup> Learning for the 21<sup>st</sup> Century: A Report and MILE Guide for 21<sup>st</sup> Century Skills, page 4, *The Partnership for 21<sup>st</sup> Century Skills*, <http://www.21stcenturyskills.org/>.

<sup>11</sup> *Ibid*, page 2.

*skills that most employees learn today will be obsolete within three to five years. Workers need the learning capacity to become lifelong learners, updating their knowledge and skills continually and independently.”<sup>12</sup>*

### **Education, Democratic Participation and Community Strength**

*“Participating effectively in communities and democracy requires people to use more advanced knowledge as well. To decide whether to support a transportation bond issue, for example, voters may need to understand its scientific, environmental, technological, political and economic ramifications.<sup>13</sup> ... Civic literacy can help students understand, analyze and participate in government and in the community, both globally and locally. Citizens should make decisions that reflect an understanding of historic implications, the role of leaders and a broader sense of political awareness.<sup>14</sup>”*

### **Individual Quality of Life**

*“Rapidly evolving technologies have made new skills a requirement for success in everyday life. Effectively managing personal affairs, from shopping for household products to selecting health care providers to making financial decisions, often requires people to acquire new knowledge from a variety of media, use different types of technologies and process complex information.”<sup>15</sup>*

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<sup>12</sup> *Ibid*, page 6.

<sup>13</sup> *Ibid*.

<sup>14</sup> *Ibid*, page 14.

<sup>15</sup> *Ibid*, page 6.

## The Paramount Importance of a Vision and a Strategy

The Committee believes that the first step to making technology work in public education is to come up with a vision for how technology is going to help teachers teach and children learn. The use of technology in our public schools is, as Council Member Brewer noted, “a hodge-podge.” A strong vision for technology in our schools will impose coherence onto the use of technology in our schools. But more importantly, a strong vision for using technology in the schools can help improve student achievement. The CEO Forum on Education and Technology supports this contention:

*“Initial research indicates that when correctly applied, technology can have a positive effect on student learning, particularly in honing higher-order thinking skills. However, it is demonstrated to be less effective if the educational objectives or the educational outcomes of the technology use are not clear.”<sup>16</sup>*

In other words, a clear and coherent vision for using technology to improve academic performance is crucial to the success of any technology in education strategy, both in and out of the classroom. A vision for technology “in the classroom is not merely a question of buying computers and upgrading infrastructure. It is also about incorporating it into the curriculum and training teachers to use it. This requires completely rethinking some issues – from redesigning the physical classrooms to dramatically improving the curriculum.”<sup>17</sup> In the end, a vision for technology will inform where technology should be used, what technology to use and how this technology is to be used. In short, a vision will determine the strategy (or strategies) to realize the potential of technology for the children in our public schools.

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<sup>16</sup> The Power of Digital Learning Integrating Digital Content, page 14, *The CEO Forum on Education and Technology*, June 2000, <http://www.ceoforum.org/>. “The CEO Forum on Education and Technology was founded in the fall of 1996 to help ensure that America's schools effectively prepare all students to be contributing citizens and productive workers in the 21st Century. To meet this objective, the Forum issued an annual assessment of the nation's progress toward integrating technology into American classrooms. The Forum, a five-year project, closed its doors in December 2001” (<http://www.ceoforum.org/about.html>).

<sup>17</sup> “Technology in the Schools”, Laura Forlano, *Gotham Gazette.com*, March 2004, <http://www.gothamgazette.com/article/tech/20040312/19/912>

## Principles for Incorporating Technology into Education

The following general principles are an integration of the conversation at the October 2003 roundtable, comments made by executives of the profiled organizations during interviews with the Digital Opportunities Team in the Fall/Winter 2003, and the discussion at the *Digital Education Leadership Conversation* on March 25 and 26, 2004 in Philadelphia, as well as further analysis and thought by the Committee in consultation with a variety of experts in the field of educational technology, most notably, Mark Gura, former Director, Office of Instructional Technology, New York City Department of Education. The following principles are meant to be suggestions only. We hope that they will help frame and guide the conversation around the use of technology in our schools.

### ***Principle No. 1: Judge by Contribution to Teaching and Learning***

Ultimately, the Committee believes that the general standard by which to judge any strategy for integrating technology in our schools should be determined by its role in contributing to teaching and learning. That is, when considering a particular technology integration strategy, the question that should always be answered is does this technology integration strategy support and complement the pedagogical strategy (or strategies) of the Department of Education? For example, in **PS 811Q**, a school for students with disabilities, technology allows students and teachers to communicate with each other more easily, which, in turn, supports the pedagogical strategy of the school to engage the students in their learning.

### **The Importance of Streamlining School Administration**

Technology should also be used to streamline administrative processes so that teachers' and administrators' time can be focused on teaching students. By making the operations of the Department of Education more efficient, more money and resources can be allocated to the teaching of students. In the end, however, the use of technology to improve administrative processes cannot take the place of the incorporation of technology into the classroom.

### ***Principle No. 2: Focus on Continuous Access***

At the October 2003 roundtable, participants stressed the need to remember that children are out of school most of the day. So to truly integrate technology into the life of students, they must have access to technology during school, after school and at home. In other words, the Committee believes the focus of technology access should be on having continuous access to technology.

Many organizations, including several profiled in this report, address *continuous* technology access in their programs. **Computers for Youth** provides every family in selected communities with a computer so that students – and their families – have access to a computer at home. The **One Economy Corporation** advocates for and runs programs that provide broadband Internet connectivity<sup>18</sup> in affordable housing units. **Tutor.com** focuses on the after-school hours by providing on-line tutoring to students at their local libraries or at community-based nonprofit organizations.

Finally, the Committee recommends that the Department of Education rethink the definition of a school day to take into account that learning can and does take place everywhere, at any time. Technology expands the time and place of learning. Through the Internet and other types of information technology, students can access educational content and materials as well as people to support learning (e.g., teachers, tutors, etc.) 24 hours a day.

### ***Principle No. 3: Install Broadband Internet Connectivity***

*“The Internet enables education to occur in places where there is none, extends resources where there are few, expands the learning day, and opens the learning place ... it connects people, communities, and resources to support learning ... it adds graphics, sound, video, and interaction to give teachers and students multiple paths for understanding ... the Web is a medium today’s kids expect to use for expression and communication – the world into which they were born.”<sup>19</sup>*

Thus, the Committee recommends that high-speed Internet connectivity should be in all schools at the minimum bandwidth<sup>20</sup> necessary to support digital content.

*“Digital content is the digitized multimedia material that calls upon students to seek and manipulate information in the collaborative, creative and engaging ways that make digital learning possible. It includes video on demand, software, CD-ROMs, website, e-mail, on-line learning management systems, computer*

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<sup>18</sup> “Connectivity” is the degree to which something or someone is connected to a network. Usually, connectivity refers to connection to the Internet. Broadband access gives users high connectivity to the Internet (Matthew Rubenstein, adviser to the Committee on Technology in Government, New York City Council).

<sup>19</sup> The Power of the Internet for Learning: Moving from Promise to Practice, page iii, *The Web-Based Education Commission to the President and the Congress of the United States*, December 2000, <http://www.hpcnet.org/webcommission>.

<sup>20</sup> Bandwidth refers to “how much information can be carried in a given time period (usually a second) over a wired or wireless communications link” (<http://whatis.techtarget.com>).

*simulations, streamed discussions, data files, databases and audio. Digital content is critical to digital learning because it [is] relevant; up to date and authentic; explored on many levels; manipulatable; instantaneous; and creative.”<sup>21</sup>*

The Committee believes that the Department of Education should take advantage of the Federal E-rate<sup>22</sup> program to the greatest extent possible to achieve this goal.

The **Michael J. Petrides School** of Staten Island is an example of a school that takes connectivity seriously. In addition to providing every student with a laptop, the entire school is “wired” with wireless broadband connectivity so that every student can log onto the Internet at any time, anywhere in the school. Another example of the use of digital content for educational purposes is the *ThinkQuest NYC Challenge* run by **ThinkQuest NYC**. This contest promotes the use of digital content, namely websites, for learning by training students (and their teachers) to build educational websites.

#### ***Principle No. 4: Ensure Reliable Technical Maintenance and Support***

Currently, a comprehensive technical maintenance and support system for schools exists in the Department of Education. Most notably, the Department of Education recently signed a contract for Dell to provide technical support services for the entire New York City public school system. However, the relevant question is: is there a sufficient level of support provided to teachers and administrators in the schools? Anecdotally, this is not the case. There are organizations like **MOUSE** that organize teams of students to provide technical support in NYC public schools. On-site support, however, does not exist in every school. The Committee recommends that the Department of Education deploy technical support resources to every school. Technical support should exist on-site in schools so that teachers can focus their time and energy on teaching.

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<sup>21</sup> The Power of Digital Learning: Integrating Digital Content, page 14, *The CEO Forum on Education and Technology*, June 2000, <http://www.ceoforum.org/>.

<sup>22</sup> “When the Telecommunications Act of 1996 was signed into law, for the first time schools and libraries became eligible for Universal Service support. An explicit goal of the Act is to ensure that schools and libraries have affordable access to advanced telecommunications. On May 7, 1997, the Federal Communications Commission (FCC) issued a unanimous ruling for implementing Universal Service. The E-Rate is the discount that schools and libraries will receive for the acquisition of telecommunication services [to promote Universal Service]. Eligible schools and libraries can receive discounts of 20–90 percent on telecommunication services, Internet access and internal connections necessary for deploying technology into the classroom (<http://www.ed.gov/Technology/overview.html>).”

### ***Principle No. 5: Teach Technology to Students***

The Committee firmly believes that every student should be taught how to use technology as a tool for teaching and/or learning as well as technology as a subject matter. Many of the organizations profiled in this report promote this belief. At **The Beacon School**, for example, every 9<sup>th</sup> grade student is required to take a *Technology Infusion Class*, which teaches students Internet research skills as well as concrete technology skills like web page design. In addition, the following schools, **The Mott Hall School**, **The Michael J. Petrides School**, **The National Academy Foundation** and **The School at Columbia University**, all dedicate a significant amount of resources and time to teaching students about technology and, more importantly, using technology as a tool to aid in learning.

### ***Principle No. 6: Provide Professional Development to Teachers***

In the area of professional development, the Committee echoes the recommendation of the Web-Based Commission to the President and the Congress of the United States:

*“Provide continuous and relevant training and support for educators and administrators at all levels. We heard that professional development – for pre K–12 teachers, higher education faculty, and school administrators – is the critical ingredient for effective use of technology in the classroom.”<sup>23</sup>*

As noted above, many of the schools profiled in this report recognize the importance of teaching their students about technology and how to use it. These schools – namely **The Beacon School**, **The Mott Hall School**, **The Michael J. Petrides School**, **The National Academy Foundation** and **The School at Columbia University** – also place a premium on teaching their teachers and administrators how to use technology for educational purposes. Additionally, there are many other organizations that work in the New York City public schools that run professional development programs geared towards the use of technology. Both **Teaching Matters** and **Vision Education** run programs that do this, while **NY Talks**, a program funded by the Bill and Melinda Gates Foundation<sup>24</sup> and run by the Council for Supervisors and Administrators<sup>25</sup>, teaches New York City public school principals to use a Palm Pilot to collect teacher assessment data, conduct school planning, as well as implement school-wide technology programs.

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<sup>23</sup> *The Power of the Internet for Learning: Moving from Promise to Practice*, page iv, *The Web-Based Education Commission to the President and the Congress of the United States*, December 2000, <http://www.hpcnet.org/webcommission>.

<sup>24</sup> <http://www.gatesfoundation.org/default.htm>.

<sup>25</sup> The Council for Supervisors and Administrators is the union that represents administrators and supervisors in the New York City public school system, including principals.



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At some point, the Department of Education took the professional development of teachers in the area of technology seriously. This is not the case now.

*“For a number of years, the school system had a cadre of roughly 150 Instructional Technologists, people who worked in the community school districts to provide support and professional development to teachers for the instructional use of technology in their classrooms. Right now, it appears that this number has been reduced to fewer than 25.”<sup>26</sup>*

However, recent developments at the Department of Education indicate that this situation may change soon.

A crucial aspect of professional development is the academic training of teachers before they get to begin their professional careers.

*“However, not enough is being done to assure that today’s educators have the skills and knowledge needed for effective web-based teaching. And if teacher education programs do not address this issue at once, we will soon have lost the opportunity to enhance the performance of a whole generation of new teachers, and the students they teach.”<sup>27</sup>*

Our recommendations:

- The Committee advocates that the Department of Education work with local higher educational institutions such as the City University of New York system to develop programs so that teachers can earn graduate or continuing education credits by participating in technology-related professional development programs.
- The Committee also recommends the creation of a new certified position at each school: a “technology” teacher. We believe technology is just as important as the other subject areas that require a license (e.g., math, science, history, etc.).
- Finally, the Committee recommends that the Department of Education and its local teacher training and certification partners follow the guidelines for the creation of programs in educational computing and technology teacher preparation<sup>28</sup> developed by the International Society for Technology in Education (ISTE).<sup>29</sup>

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<sup>26</sup> Mark Gura, former Director, Office of Instructional Technology, New York City Department of Education.

<sup>27</sup> The Power of the Internet for Learning: Moving from Promise to Practice, page iv, *The Web-Based Education Commission to the President and the Congress of the United States*, <http://www.hpcnet.org/webcommission>.

<sup>28</sup> ISTE has developed technology standards teacher preparation programs for all teachers ([http://cnets.iste.org/ncate/n\\_found.html](http://cnets.iste.org/ncate/n_found.html)), technology facilitators ([http://cnets.iste.org/ncate/n\\_fac-](http://cnets.iste.org/ncate/n_fac-)

### ***Principle No. 7: Define Technology Standards***

The Committee believes that the Department of Education should consider adopting the National Educational Technology Standards (NETS)<sup>30</sup> for students, teachers and administrators. These standards, adopted in many states throughout the country, would guide the development of a technology curriculum for students as well as the design of professional development curriculums for teachers and administrators. The NETS is also a project of ISTE.

- For a complete version of the NETS technology standards for *students*, go to the following web link: [http://cnets.iste.org/students/s\\_stands.html](http://cnets.iste.org/students/s_stands.html).
- For a complete version of the NETS technology standards for *teachers*, go to the following web link: <http://cnets.iste.org/currstands/cstands-netst.html>.
- For a complete version of the NETS technology standards for *administrators*, go to the following web link: [http://cnets.iste.org/administrators/a\\_stands.html](http://cnets.iste.org/administrators/a_stands.html).

### ***Principle No. 8: Research Best Practices and Survey Stakeholders***

#### **Research Best Practices, Strategies and Programs**

In order to implement educational technology strategies that will impact learning in the New York City public schools, the Committee recommends that the Department of Education commit to researching and identifying the best programs, practices and strategies in educational technology that have been implemented in other cities and states, as well as around the world, in order to evaluate their applicability within the context of New York City. Locally, both the **Center for Children and Technology** and the **Center for Integrated Learning Technologies**, located at Teacher's College, Columbia University, do this work. This research needs to happen on a regular basis so that it can keep up with the pace of change in the world of technology. Also, particularly in a time of limited resources, the benefits of any educational technology program, practice or strategy must be evaluated against its monetary costs. In other words, *cost-benefit analysis* has to be a component of any research done.

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[stands.html](#)), technology leaders ([http://cnets.iste.org/ncate/n\\_lead-stands.html](http://cnets.iste.org/ncate/n_lead-stands.html)) as well as computer science teachers ([http://cnets.iste.org/ncate/n\\_cs-stands.html](http://cnets.iste.org/ncate/n_cs-stands.html)).

<sup>29</sup> "ISTE is a nonprofit professional organization with a worldwide membership of leaders and potential leaders in educational technology. ... [is] dedicated to providing leadership and service to improve teaching and learning by advancing the effective use of technology in K-12 education and teacher education" (<http://www.iste.org/about/>).

<sup>30</sup> For more information about the NETS project, go to the following web link: [http://cnets.iste.org/nets\\_overview.html](http://cnets.iste.org/nets_overview.html).

## Research the State of Technology in NYC Public Schools

In order to track whether technology is being used well in the New York City public schools, the Committee believes that research around the “state of technology” in NYC public schools must happen on a regular basis. This research will serve as a benchmark for where the Department of Education is and where it needs to go in terms of using technology in the schools.

## Survey Students, Parents, Teachers and Administrators about Technology

The Committee also thinks it is necessary that students, parents, teachers and administrators are surveyed on a continual basis to understand how they use technology, whether it is at school or in the home, and how they think technology should be used. Locally, organizations like **MOUSE** and **Computers for Youth** are already doing this. Nationally, many school districts are using the Taking a Good Look at Instructional Technology (TAGLIT)<sup>31</sup> online technology survey, a project of the Bill and Melinda Gates Foundation. Currently, the **NY Talks** program, run by the Council of Supervisors and Administrators, teaches school supervisors and principals how to use TAGLIT to provide them with information about the technology needs of their school. The Committee recommends that the Department of Education use the TAGLIT and other similar surveys for this purpose as well.

## *Principle No. 9: Build Grassroots Support*

The Department of Education needs to garner support from students, parents, teachers and administrators for any technology initiatives it puts forth to be successful. They are the ones using technology for teaching and learning. And, simply put, technology only works when it is widely used. One of the ways to build grassroots support for technology is to communicate why the use of technology in education is important and effective for teaching and learning. This goal requires the research mentioned in *Principle No. 8* to be disseminated widely among and communicated to students, parents, teachers and administrators. To do this, the Committee recommends the creation of localized educational web portals for these important stakeholders in our public school system.

*“An educational web portal would be a ‘one-stop shopping’ resource that would put students, parents, teachers and administrators in touch with needed educational resources, ensure the consistency (and coherence) of content to members of the learning community and, most importantly, eliminate the need to research and locate resources. Technology should make life easier for its users, and an educational web portal would do this. The educational web portal*

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<sup>31</sup> <http://www.taglit.org/taglit/login.aspx>.

*should provide content for students to use directly in their learning activities, professional development resources for teachers and administrators and general technology 'tools' (e.g., word processing programs, on-line encyclopedias, specialized calculators, etc.). This portal could also be the focal point or nexus where other types of important information or information systems can be accessed such as student test scores or an online student attendance system."*<sup>32</sup>

The localized aspect of these educational web portals is important. When students, parents, teachers and administrators are involved in the design and creation of their school's web portal, they are more likely feel "ownership" of it, increasing the likelihood of widespread use of the portal. Some examples of localized educational web portals include the **Beacon School's** web portal (<http://www.beaconschool.org/>), **One Economy's The Beehive** (<http://www.thebeehive.org/>) and **Computers for Youth's Community Corner** (<http://www.communitycorner.org/>).

### ***Principle No. 10: Dedicate Sufficient Funding***

Despite the paramount importance of a vision and a strategy, a major key to the success of the use of technology in our schools is sufficient funding. As the Web-Based Commission to the President and the Congress of the United States wrote in its seminal report, The Power of the Internet for Learning: Moving from Promise to Practice, the Committee also believe that the Department of Education needs to remember the following.

*"Sustain funding – via traditional and new sources – that is adequate to the challenge at hand. Technology is expensive, and web-based learning is no exception. Technology expenditures do not end with the wiring of a school or campus, the purchase of computers, or the establishment of a local area network. These costs represent just the beginning."*<sup>33</sup>

In terms of concretely ensuring funding for the integration of technology in the schools, the Committee believes that:

*"These [technology in education] initiatives could include tax incentives, additional public-private partnerships, increased state and federal appropriations, and the creation of a learning technology trust fund. The [Committee] encourages states and localities to aggregate their market strength*

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<sup>32</sup> Mark Gura, former Director, Office of Instructional Technology, New York City Department of Education.

<sup>33</sup> The Power of the Internet for Learning: Moving from Promise to Practice, page v, *The Web-Based Education Commission to the President and the Congress of the United States*, December 2000, <http://www.hpcnet.org/webcommission>.

*as a way of bringing advanced technologies to education at a considerably lower cost.*"<sup>34</sup>

The funding strategy that is ultimately adopted requires a comprehensive vision for the use of technology in our schools. By coming to agreement on how technology should be used in our schools and then funding this vision sufficiently, the Committee firmly believes that the NYC school system will be a model of excellence in its integration of technology and education, and that our children will be much better prepared to meet the challenges of an increasingly technology-driven global economy.

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<sup>34</sup> *Ibid*, page vi.

## Thanks and Acknowledgements

Special thanks to *Danisa Dambrauskas*, *Kazu Hoshino*, *Gavin O'Donoghue* and *Jennifer Vallone* of the Digital Opportunities Team, Graduate Department of Urban Affairs and Planning, Hunter College as well as *Lisa Tolliver* who oversaw their work. Their hard work and dedication made this report possible.

Thanks and acknowledgement should also be given to the innovators and leaders who participated in the October roundtable discussion and/or took the time to speak with the Digital Opportunities Team and the Committee about their organization for this report:

- *Scott Hughes*, Apple Computer
- *Chris Lehmann*, The Beacon School
- *Shelly Pasnik* and *Margaret Honey*, Center for Children and Technology (Education Development Center)
- *Mike Everett-Lane*, Computers for Youth
- *Paul Robert Marino*, Concord High School (in Staten Island)
- *Jo Ann Aaronson*, Dell, Inc. (formerly of Apple Computer)
- *Michael Schlar* and *Richard Relkin*, NY Talks (Council of School Supervisors & Administrators)
- *Robin Willner* and *Pamela Haas*, IBM Corporation
- *Bruce Lincoln*, Institute for Learning Technologies (Teacher's College, Columbia University)
- *Michael Davino*, formerly Michael J. Petrides School (in Staten Island), now Springfield (NJ) Public School District
- *Anthony Salcito*, Microsoft Corporation
- *Mark Briller*, The Mott Hall School
- *Carole Wacey* and *Calvin Hastings*, MOUSE
- *Gregg Betheil*, The National Academy Foundation
- *Mark Levine*, One Economy Corporation
- *Janet Healy*, PS 811Q
- *Luyen Chou*, The School at Columbia University / The Center for Integrated Learning and Teaching (Teacher's College, Columbia University)
- *Lynette Guastaferro* and *Jane Condliffe*, Teaching Matters
- *Lisa Ernst*, ThinkQuest NYC
- *George Cigale*, Tutor.com
- *Laura Allen*, Vision Education, Inc.
- *Greg Gunn*, Wireless Generation
- *Jon Rubin*, Thirteen/WNET New York

## Part I: The Report – Profiles of Innovators and Leaders Who Make a Difference

The Committee would also like to thank *Cathilea Robinett* and *Marina Leight* of the Center for Digital Education for inviting us to the *Digital Education Leadership Conversation* in Philadelphia, Pennsylvania on March 25 and 26, 2004, to learn from so many amazing educational technologists.

We would also want to acknowledge the following people for their input, comments, editing, guidance and advice:

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- *Sarah Holloway* and *Andrew Rasiej*, Board Members of MOUSE
- *Jeffrey Haberman* and *Donna DeCostanzo*, Infrastructure Division, New York City Council
- *Steve Hamill*, Communications Division, New York City Council
- *Mark Gura*, former Director, Office of Instructional Technology, New York City Department of Education
- *Elisabeth Stock*, Executive Director, Computers for Youth
- *Cal Snyder* (Council Member Gale A. Brewer) and *Sarah D'Ambruso* (Bruce Lai), our partners in life.

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Concord High School	<i>Paul Robert Marino</i>	Technology Coordinator
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IBM Corporation	<i>Robin Willner</i>	Director, Corporate Community Relations
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One Economy Corporation	<i>Mark Levine</i>	Vice President
The School at Columbia University / The Center for Integrated Learning and Teaching	<i>Luyen Chou</i>	Associate Director / Executive Director
ThinkQuest NYC	<i>Lisa Ernst</i>	Executive Director
Tutor.com	<i>George Cigale</i>	CEO
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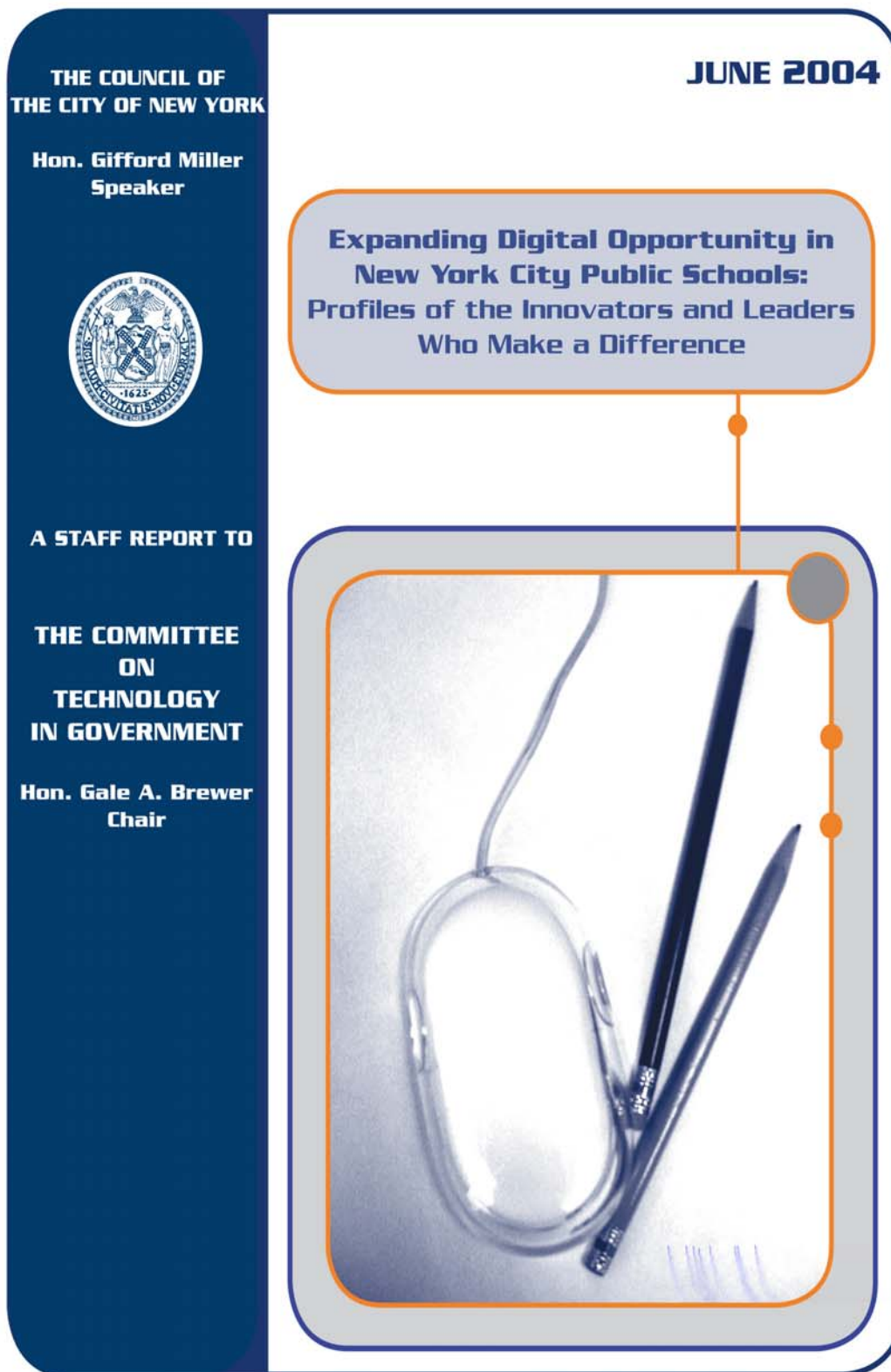
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Part II: The Profiles  
Profiles of Innovators and Leaders Who Make a Difference



Part II: The Profiles  
Profiles of Innovators and Leaders Who Make a Difference

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Part II: The Profiles  
Profiles of Innovators and Leaders Who Make a Difference

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## Structure of Profile

There are three parts to each organizational profile: the organizational snapshot, the impact model and the profile.

### *Organizational Snapshot*

The Organizational Snapshot is a compilation of basic facts about each organization:

- **Organization Name.**
- **Year Founded.**
- **Website.**
- **Business Category.** The type of service the organization provides.
- **Organization Type.** Non-profit, for-profit or school.
- **Mission.**
- **Population Served.**
- **Availability of Service.** When and where the organization provides its services.
- **Technology Used.**
- **Annual Budget.** Where available, the numbers are estimates from calendar year 2002 or 2003.

### *Impact Model*

An impact model is a visual representation of:

- The mission of each profiled organization;
- The business process (or processes) of each profiled organization; and,
- The intended impact of the profiled organization's work.

Each box on the impact model is color-coded and represents the following:

- **White.** Mission.
- **Grey.** Internal organizational process.
- **Purple.** Potential for *Improved Learning*.
- **Blue.** Potential for *Improved Teaching*.
- **Yellow.** Potential for *Improved Communication*.
- **Light Blue.** Potential for *Increased Access*.

### *Profile*

There are three parts to each profile: the introduction, the program specifics and the program results. The introduction includes a brief history of the organization and a brief description of what the organization does. The program specifics section is a detailed look at each profiled organization's program (or programs). The program



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results section summarizes some of the outcomes or the intended outcomes of the organization's programs as reported by the profiled organization.

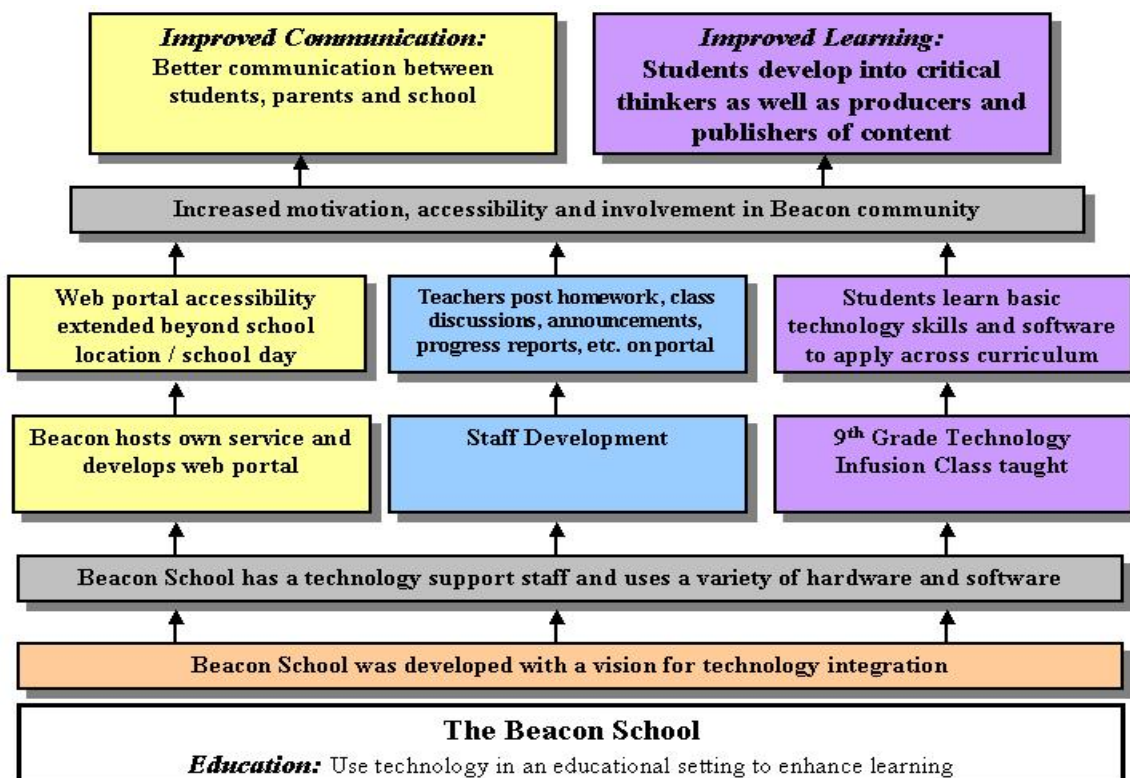
## The Profiles

### *The Beacon School*

#### Organizational Snapshot

ORGANIZATION	The Beacon School
YEAR FOUNDED	1993
WEBSITE	www.beaconschool.org
BUSINESS CATEGORY	Alternative Public High School
ORGANIZATION TYPE	School
MISSION	Infusion of information technology in a college preparatory curriculum
POPULATION SERVED	Grades 9–12
AVAILABILITY OF SERVICE	Before School, After School
TECHNOLOGY USED	Wireless Internet, Laptop Computers, Computer Labs, Scanners, Digital Cameras, Multi-media software, Data Analysis software
ANNUAL BUDGET	

#### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

The Beacon School is a public high school located in New York City's District 3 (Region 10), which encompasses much of the Upper West Side neighborhood of Manhattan. Beacon was founded in 1993 with a vision to integrate technology into all facets of its classrooms, its after-school programs, as well as its students' home environments.

### II. PROGRAM SPECIFICS:

*RESOURCES* – Beacon's mission is made possible by a financial and pedagogical commitment to the infusion of technology in aspects of the school's operations, particularly instruction. Beacon has a technology office staffed by a full-time technology administrator, as well as a technology coordinator. Beacon is also equipped with its own server, wireless Internet connectivity, four computer labs (open before, during and after-school) and a mobile laptop station. Each classroom has at least one computer. Other hardware that the Beacon School uses includes color scanners and digital cameras. Software used in the classroom includes: office applications, multimedia tools (such as movie making, graphics manipulation, web design software) and scientific data analysis software. In addition to its regular operating budget, the Beacon School fundraises from individuals, partnerships with other organizations, and foundation and governmental grants.

*BEACON SCHOOL.ORG* – Beacon School has its own web portal ([www.beaconschool.org](http://www.beaconschool.org)) designed for and by Beacon staff and students. This portal permits online information sharing and collaboration, such as the posting of homework assignments, student progress reports and school announcements, as well as facilitated class discussions. Authorized parents, students and teachers can access the school portal from the Internet. The portal facilitates communication between Beacon teachers and staff with its students and their parents, both in and out of school. Parents receive updates through school-related notices and students can receive feedback on their coursework from their peers as well as their teachers. Students can also check on homework assignments and school events. Any interested party can also view the public segments of the portal (e.g., general school information, mission and history, multimedia projects, school news, etc).

*STUDENTS AND TEACHERS* – Beacon provides a great deal of staff development throughout the year regarding use of the portal, as well as other effective ways to use technology in the classroom. All incoming 9<sup>th</sup> graders are required to take a Technology Infusion class, which teaches Internet research skills, critical analysis, word processing, web page design and use of the school's web portal. This class lays the foundation for more advanced use of technology instruction for students. For example, one student

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created a movie trailer for *Othello* using a digital camera and movie-making software as part of his/her English project (available under *Beacon Film Festival* at the school portal). As technology skills and comfort levels with technology increase, students gain more expertise and learn to act as producers of software and services. For example, some students serve as Technology Staff Members, providing on-site tech support to teachers and their peers.

### III. PROGRAM RESULTS:

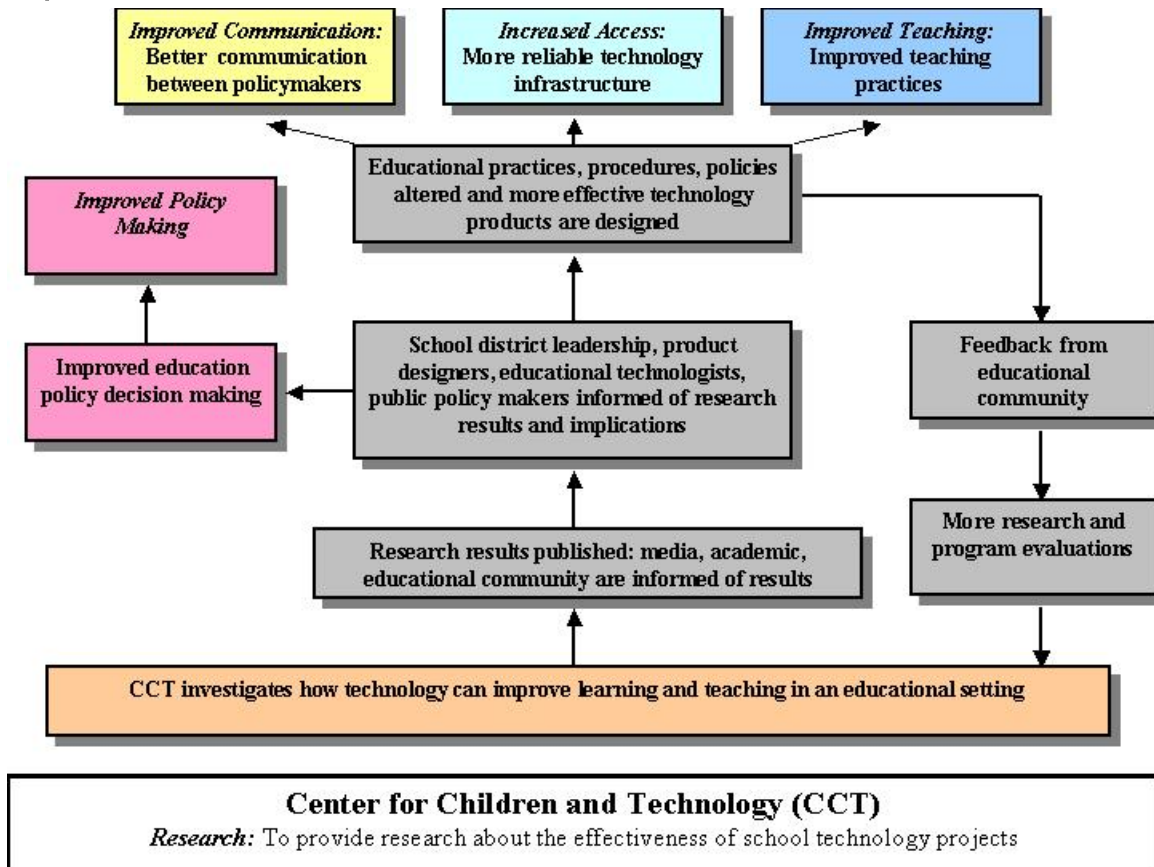
*TECHNOLOGY INFUSION HAS TWO GOALS* – First, to facilitate communication among students, parents and teachers. Second, to influence teachers and students to critically analyze their work and become more productive. At Beacon, students are viewed not only as learners and consumers, but also as teachers, producers and publishers of content. They produce tangible, useful products while learning technology skills and improving their academic performance. The work of Beacon students can be viewed at the school's web portal (see URL, above).

## Center for Children and Technology

### Organizational Snapshot

ORGANIZATION	Center for Children and Technology
YEAR FOUNDED	1980
WEBSITE	www.edc.org/cct
BUSINESS CATEGORY	Applied Research
ORGANIZATION TYPE	Non-Profit Organization
MISSION	Research how technology can enhance learning and teaching
POPULATION SERVED	Educational Community
AVAILABILITY OF SERVICE	Outside School, In School
TECHNOLOGY USED	Websites, PDAs
ANNUAL BUDGET	\$4.5 million

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

Originally founded in 1980 at Bank Street College as a research division, in 1993, Center for Children and Technology (CCT) became a division of the Educational Development Center, Inc. (EDC). CCT's goal is to generate applied research that is relevant to teachers and principals and can be used immediately to make strategic, operational and/or pedagogical decisions. CCT conducts applied research through evaluating large-scale programs, implementing pilot educational programs, and directing district and school-based technology initiatives. All research conducted by CCT is done in a school setting.

### II. PROGRAM SPECIFICS:

*RESEARCH* – CCT's work includes partnering with school districts and teachers, conducting simple surveys, and developing a National Technology Plan with the U.S. Department of Education's Office of Educational Technology. Their applied research falls into four broad categories: Schools and Technology, Access and Equity, Online Communities and Inquiry and Design. The following are some examples of CCT's applied research.

- CCT helped Union City Public Schools in New Jersey improve the academic achievement of children by examining the outcomes of programs that distribute computers (both laptops and networked desktops) to high school teachers and students so that district administrators could develop strategies to improve the school system's technology integration efforts. In addition, CCT helped Union City deliver high-speed Internet connectivity to all 11 schools in its district, linking more than 2,000 PCs located in classrooms, library media centers, computer labs and teacher's and student's homes.
- Recently, CCT has conducted a five-year evaluation of a New Mexico program called *Regional Education Technology Assistance* (RETA) and found that the program has provided high-quality professional development to thousands of teachers in New Mexico.
- Locally, CCT conducted a study for *Computers For Youth* (CFY), also profiled in this report, to study at-home use of computers that were given to middle school children as part of CFY's program.
- CCT is also conducting a two-year independent research study of the implementation of the *Grow Report*, a web-based test reporting system designed to help teachers and principals use assessment data for standards-based learning.
- CCT is currently evaluating the efficacy of three Intel programs: *"Intel Teach to the Future" Teacher Training Program*, *The Intel Computer Clubhouse Network*, and *The Intel Education Destination Web Site*.

## Part II: The Profiles – Profiles of Innovators and Leaders Who Make a Difference

*PROGRAMS* – CCT has developed the following programs:

- *Imagination Place!* is an interactive, online design space for use in homes and informal settings by girls ages 8 – 14. It provides young girls with opportunities to see themselves as engineers and inventors.
- *KidSmart*, created in partnership with IBM, is a website and CD-ROM for early childhood teachers as part of a program called *KidSmart*.
- Handheld diagnostic mathematics assessment for early elementary mathematics instruction, created by a team including CCT, Wireless Generation, and Dr. Herb Ginsburg of Teacher's College, Columbia University.

### III. PROGRAM RESULTS:

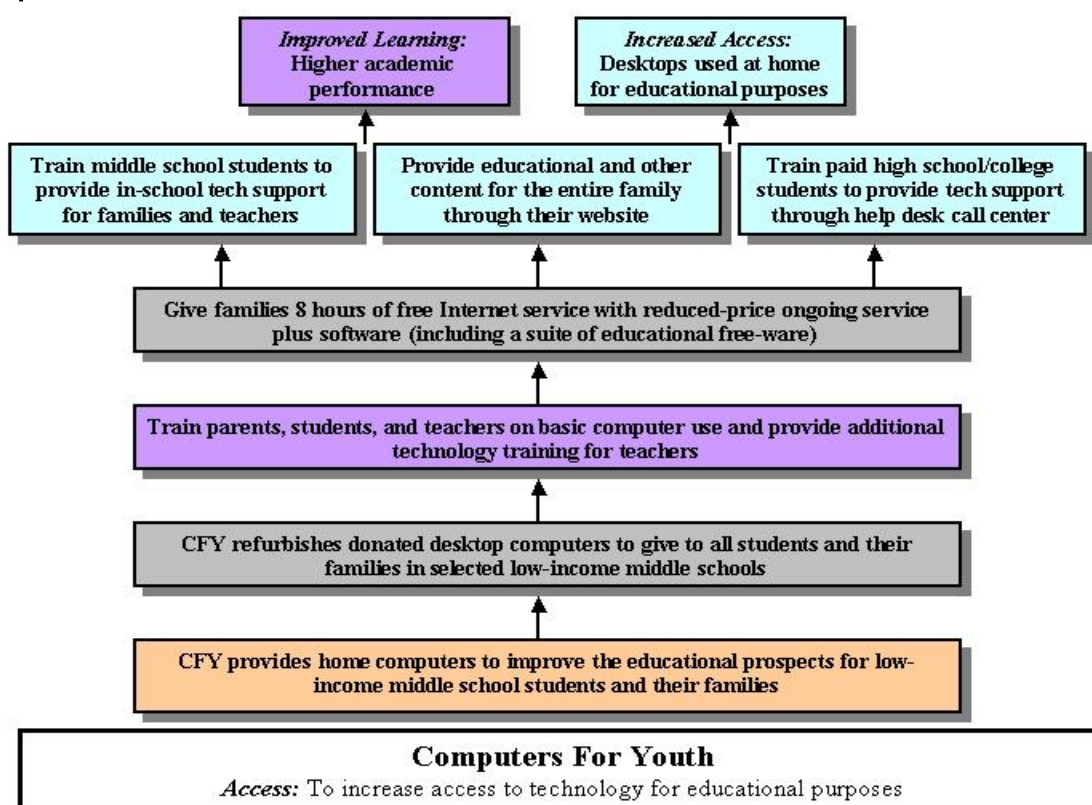
CCT's access and equity research, specifically the Promoting Assets and Access project, has directly resulted in revisions to the National Council of Teachers of Mathematics Standards. CCT's program evaluation of New Mexico's RETA technology initiative has helped increase technology use among New Mexico's teachers and students. This evaluation has also helped drive the drafting of statewide teacher technology standards and the attraction of additional technology funding for New Mexico. Finally, CCT's partnership with the Union City School District has helped raise academic performance and technology literacy among underserved elementary, middle school and high school students, thus, enabling them to exceed their urban counterparts on standardized measures of academic performance.

## Computers for Youth

### Organizational Snapshot

ORGANIZATION	Computers For Youth
YEAR FOUNDED	1999
WEBSITE	www.cfy.org
BUSINESS CATEGORY	Access Provider, Training, Content Development, Tech Support, Teacher Development, Parental Involvement Outreach
ORGANIZATION TYPE	Non-Profit Organization
MISSION	Improve the educational, social and economic prospects for low-income students and families by providing them with home computers, relevant content and technology training and support
POPULATION SERVED	Gr. 6–8, Low-Income Families
AVAILABILITY OF SERVICE	In School, After School
TECHNOLOGY USED	Desktop Computers, Websites, Help Desks
ANNUAL BUDGET	\$1.4 Million

### Impact Model





## Profile

### I. INTRODUCTION TO ORGANIZATION:

Computers for Youth (CFY) is a non-profit organization whose mission is to improve the educational prospects of low-income students and their families by providing them with home computers and the training and support to use them. CFY provides community-based and comprehensive services. Focusing on home access, CFY targets every student in a particular community who is in 6<sup>th</sup> – 8<sup>th</sup> grade and offers a wide range of support services to ensure that the computers that it provides are useful and functional.

### II. PROGRAM SPECIFICS:

*COMPUTER DISTRIBUTION* – Through partnerships with corporations and businesses, CFY receives and refurbishes donated computers. It then selects public middle schools that have 85% or more of their students eligible for free lunches and an administration and staff that have demonstrated a commitment to improving student learning. CFY conducts a training session at each school to instruct students, parents and teachers on the use of the computer. These training sessions, which are mandatory, cover various aspects of computer use, such as computer system set up, basic computer literacy, using word processor and email applications and navigating the Internet. After completing the training session, CFY gives families eight hours of free Internet service with reduced-price ongoing service plus software (including a suite of educational free-ware). This process repeats with each incoming 6<sup>th</sup> grade class at the school as well as any newly enrolled students. By providing each student and teacher with a home computer, CFY blankets the community with technology in order to improve the learning environment of the children and families involved in the program.

*TECH SUPPORT* – The community involvement of CFY does not end with the initial computer training and Internet access. Understanding that computers require maintenance in order to be useful, CFY provides tech support in several ways. Each family has access to CFY's Help Desk, which is staffed by bilingual high school and college students from within the community who are trained and paid by CFY. In each school, there are several 8<sup>th</sup> grade students trained by CFY to provide support through their *Tech Helper* program. Although these students are not paid, they do accrue points to be redeemed for technology-related prizes. Tech Helpers develop valuable computer skills, while providing technical support to the community.

*CONTENT* – CFY has developed a web portal to make the World Wide Web more manageable and relevant to families. The site, [www.communitycorner.org](http://www.communitycorner.org), is rich with content appropriate to the communities served by CFY. It provides information on a variety of topics, including study skills, financial literacy and general health. The site is designed and maintained largely by student interns. The content is bilingual.

III. PROGRAM RESULTS:

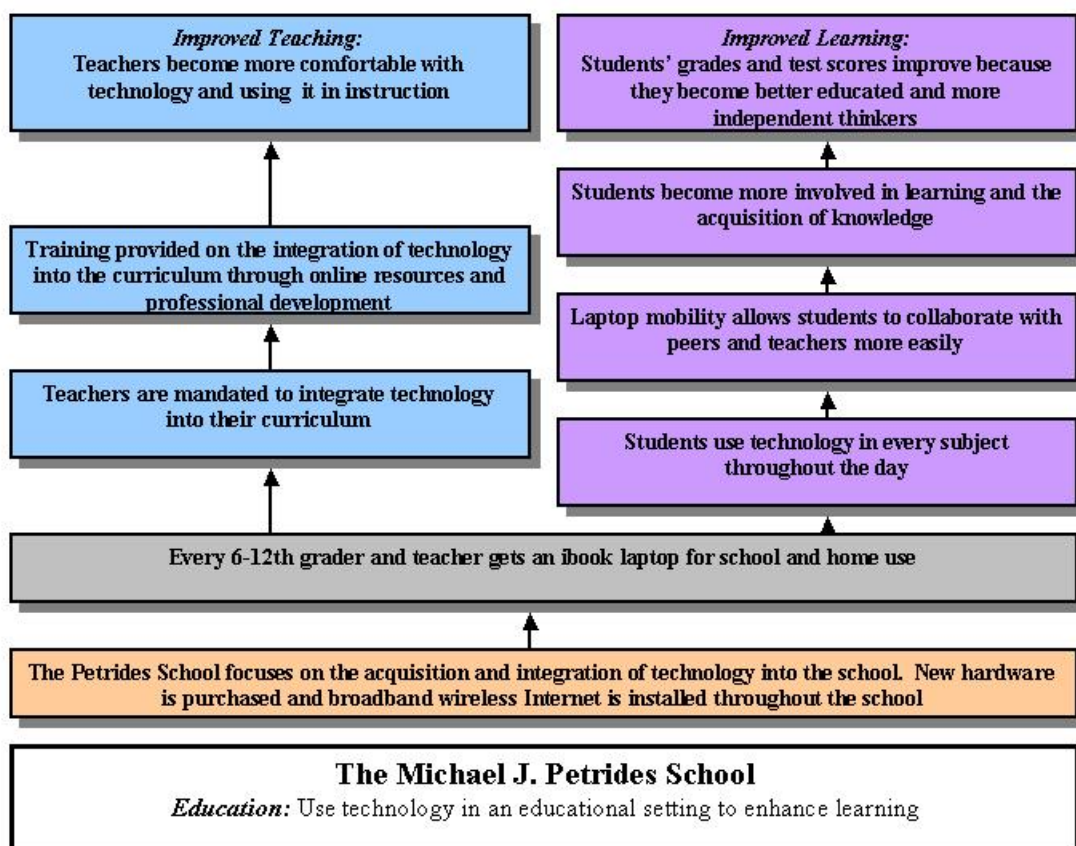
Since its inception, CFY has given away over 4,000 computers and now reaches 1,500 families per year. It has replicated its program in 10 schools and has been responsible for training more than 8,000 students, parents, and teachers. Using focus groups and surveys, CFY has found that more than 75% of students put more effort into their schoolwork, and almost 60% of teachers reported increased student confidence with the use of technology after CFY enters a community. In addition, about 71% of parents reported that they use the computer to help their children with homework, and 57% said that family members have become closer as a result of using the computer together. Schools have also reported positive results. The saturation of the community with home computers enriches the learning experiences of all students while, at the same time, increasing their engagement and motivation in school.

### *The Michael J. Petrides School*

#### Organizational Snapshot

ORGANIZATION	The Michael J. Petrides School
YEAR FOUNDED	2000
WEBSITE	www.petrides.com
BUSINESS CATEGORY	Public School
ORGANIZATION TYPES	School
MISSION	Provide high quality education that integrates technology in all parts of the educational experience
POPULATION SERVED	Gr. K–12
AVAILABILITY OF SERVICE	In School
TECHNOLOGY USED	iBooks, Macs, Wireless Internet
ANNUAL BUDGET	

#### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

The Michael J. Petrides School is a public magnet school located on Staten Island. The K – 12 school educates about 1,300 students a year who are picked by lottery. In 2000, the Petrides School decided that its their main focus was to become a technology school that made useful, well-planned, integrated technology available to each one of its students. At the Petrides School, technology is used to enhance learning.

### II. PROGRAM SPECIFICS:

*TECHNOLOGY* – Each student in grades 6 – 12 and every teacher is given an *Apple ibook* laptop for his or her personal use. In the lower grades, each classroom is equipped with four wireless *Macintosh* desktops for the students to use. Wireless broadband Internet service has been installed in the school, making it possible to log on to the Internet from almost any location in the building. The students have use of their laptops in school and at home from September – June. During the summer, the computers are returned to the school for general maintenance and upgrades.

The Petrides School's philosophy is that technology should be focused on helping students become independent, flexible thinkers who will be able to respond to the rapidly changing world that awaits them after graduation. To accomplish this goal, technology is integrated into almost every part of the school's curriculum. Students use technology to complete science labs and review the labs at the end of the year, create *PowerPoint* presentations, make *iMovies*, which are a series of images put together with a soundtrack, and research topics as needed. As the former principal, Mike Davino, states, his students use technology to “manifest knowledge learned,” by making something concrete out of the new knowledge or concepts taught in class. Without the aid of technology, these would have remained less tangible to the students.

*PROFESSIONAL DEVELOPMENT* – When the school decided to focus on technology the teachers were told to incorporate it into their lessons as they would a new textbook. The school provided training on the use of new technology and the creative ways it can be used to enhance classroom instruction. Teachers are also offered ongoing training from an internal school website where they can learn how to use any unfamiliar computer program (e.g., *PowerPoint* and *Photoshop*). The site takes users through a step-by-step process using easy to understand language that shows teachers how to use specific programs such as *PowerPoint*, *Photoshop*, and others. Once teachers have mastered a new program, they can then incorporate it into their lesson plan or, at the very least, better understand how to evaluate a student's work in these programs.

## Part II: The Profiles – Profiles of Innovators and Leaders Who Make a Difference

*FUNDING* – The initial cost to create a wireless school and purchase the equipment was high. The school believes, however, that it is a sound investment because students have a better educational experience. In addition, the school has saved money by having less furniture and more space, by not hard-wiring the building, and by not having to create computer labs. Each student is asked to pay \$25 a year towards technology maintenance costs. Over 90% of the students pay the fee. However, no student is denied a computer based on an inability to pay.

### III. PROGRAM RESULTS:

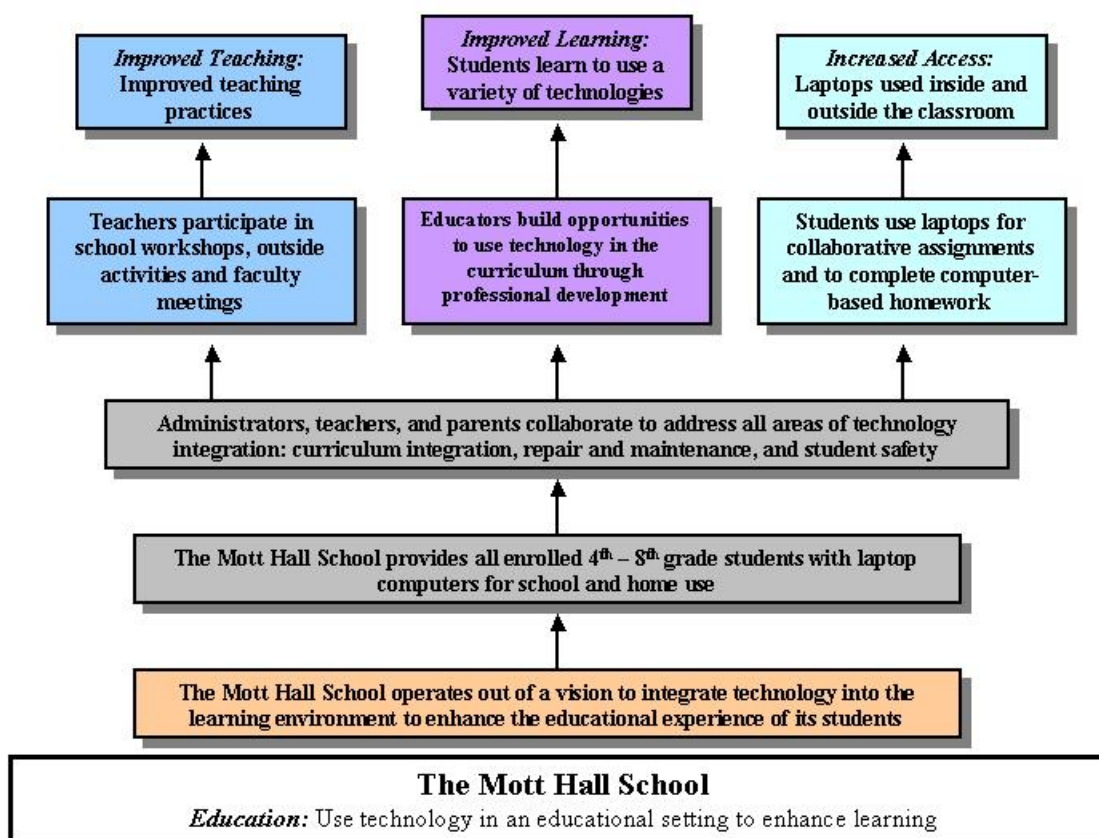
Since the total integration of technology in Petrides, the overall scores of students on the Regents Exams have been good. Each 8<sup>th</sup> grader at Petrides takes three Regents Exams normally taken by students in much higher grades, and they perform very well. Petrides students take the Math A exam normally given in 10<sup>th</sup> grade, passing 55 – 60% of the time. They also take the Living Environment exam normally given in 9<sup>th</sup> grade, passing 75 – 80% of the time. Furthermore, they take the American History exam normally given in 11<sup>th</sup> grade, passing 90% of the time.

## *The Mott Hall School*

### Organizational Snapshot

ORGANIZATION	The Mott Hall School
YEAR FOUNDED	1996
WEBSITE	www.motthall.org
BUSINESS CATEGORY	Private School
ORGANIZATION TYPE	School
MISSION	Dedicated to the academic and personal development of students who will become tomorrow's leaders
POPULATION SERVED	Gr. 4–8
AVAILABILITY OF SERVICE	In School
TECHNOLOGY USED	Desktop Computers, Laptops, Digital Cameras
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

The Mott Hall School, an intermediate magnet school serving students in 4<sup>th</sup> – 8<sup>th</sup> grades, is dedicated to the academic and personal development of students with the goal of training them to be future leaders. Mott Hall was one of the first schools in the country to give laptops to every student.

### II. PROGRAM SPECIFICS:

*ACCESS* – Founded in 1986, The Mott Hall School is a math, science, and technology academy with a history in the area of educational technology. Located in School District 6 in the Harlem / Washington Heights neighborhood of Manhattan, most of its students are Hispanic, and it has one of the largest percentages of bilingual students in the city. In 1994, through a program of the Institute for Learning Technologies at Teacher's College, Columbia University, Mott Hall was wired for high-speed Internet access as part of the *Harlem Environmental Access Project* (HEAP). This program was an initiative to wire schools and libraries to provide Internet access to empower people to take action in their communities on the issue of environmental justice. The infrastructure provided through HEAP would make Mott Hall's later projects in educational technology possible.

*LAPTOPS* – In 1996, Mott Hall became one of the first schools in the country to give laptops to students. In response to the growing "digital divide," teachers and administrators at the school initiated a laptop distribution program that would change teaching and learning at the school. Starting with one class, they gradually introduced laptops into every classroom in every grade. Parents and staff developed a comprehensive technology integration approach to dealing with curriculum integration, repair and maintenance, and even student safety. The inclusion of all stakeholders – parents, teachers, and administrators – continues to be an important factor in the success of this program.

*CURRICULUM* – At the Mott Hall School, students use their laptops to correspond with youth in other countries, engage in hi-tech science experiments, create artwork using digital photography, produce multimedia presentations, develop digital models and participate in many other activities. The teacher in each classroom serves as a facilitator for the use of technology, and the administration of the school has created an environment in which each teacher is given the opportunity to lead and to shape the curriculum using whatever technological tools are appropriate. Teachers are also provided with many opportunities for professional development, including seminars at institutions such as City College and Teachers College at Columbia University. The school creates opportunities for teachers to share their own successes with other educators, during in-school meetings and at outside forums.

III. PROGRAM RESULTS:

The Mott Hall School measures the success of its laptop integration program by observing students in the 7<sup>th</sup> and 8<sup>th</sup> grades to assess their proficiency in using a variety of computer programs. Staff members have created assessment tools to evaluate the content and the presentation of student work. Parents of students at Mott Hall have reported that students are reading and working on homework more than they did prior to having a laptop. Additionally, over the course of the laptop program, students and teachers at the school have won several awards for their use of educational technology.

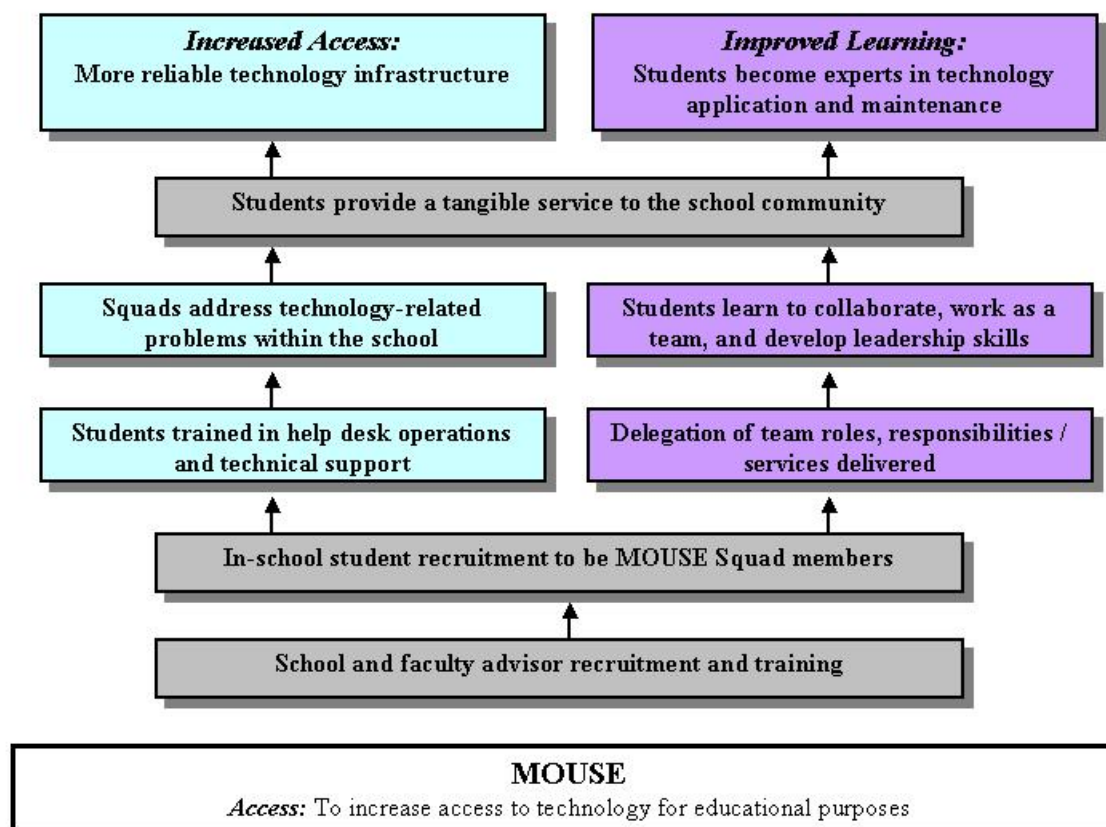


## MOUSE

### Organizational Snapshot

ORGANIZATION	Making Opportunities for Upgrading Schools and Education (MOUSE)
YEAR FOUNDED	1997
WEBSITE	www.mouse.org
BUSINESS CATEGORY	Training, Research
ORGANIZATION TYPE	Non-Profit Organization
MISSION	Act as a catalyst for effective integration of technology in public schools
POPULATION SERVED	Gr. 6–12
AVAILABILITY OF SERVICE	In School, After School
TECHNOLOGY USED	Help desks (via MOUSE Squads)
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

MOUSE (Making Opportunities for Upgrading Schools and Education) is a non-profit organization that aims to be a catalyst for the effective integration of technology in the New York City Public Schools, thus empowering students and schools to succeed in the information age.

### II. PROGRAM SPECIFICS:

*MOUSE Squad* – MOUSE Squad is a school-based technical support program for and by high school and middle school students based on the help desk models standard in the private sector. The core elements of the program are computer repair, database and help desk operations training, and Information and Communication Technology (ICT) career pathway development programs. The MOUSE Squad help desk operates during the school day and provides teachers, administrators and students with a trained support staff to solve technical problems. MOUSE Squads allow students to learn 21<sup>st</sup> century technical and workforce skills (e.g., help desk skills, data collection and analysis, computer troubleshooting and problem solving) while, at the same time, engaging them in their school community. The cost savings garnered by the technical support provided by a MOUSE Squad can be used to address a school's other technology needs.

*RECRUITMENT, TRAINING, AND SUPPORT* – Launching MOUSE Squad typically begins with regional administrators or others, such as elected officials, working with MOUSE to identify appropriate schools. Selected schools must complete an application process to enter the program. Each school identifies a faculty advisor who must attend 6 – 18 hours of training workshops. At workshops, faculty advisors learn ways to successfully recruit, train, and manage their MOUSE Squad. Recruitment at their respective schools is followed by workshops for MOUSE Squad members (students) on the basics of managing a technical support help desk including: delegation of team roles, data collection and analysis, creation of reports and use of the MOUSE Squad Ticket Tracking System. In addition to training, MOUSE provides support with online training, yearly awards and incentive programs, weekly email updates, regular newsletters, site visits from MOUSE staff, tech industry internships, field trip opportunities for students, continued training of faculty advisors, management of student listservs and on-line MOUSE curriculum materials.

*HELP DESK* – Each MOUSE Squad has a physical base of operations within the school building and operates as either a component of an existing technology class or runs as a club/activity. A MOUSE Squad provides up to 40 hours of technology support services per week. Its responsibilities include responding to requests for service, conducting

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routine maintenance (e.g., cleaning computers and conducting virus scans), improving the quality of the help desk services, supporting the school's technology plan, and serving as computer lab assistants.

### III. PROGRAM RESULTS:

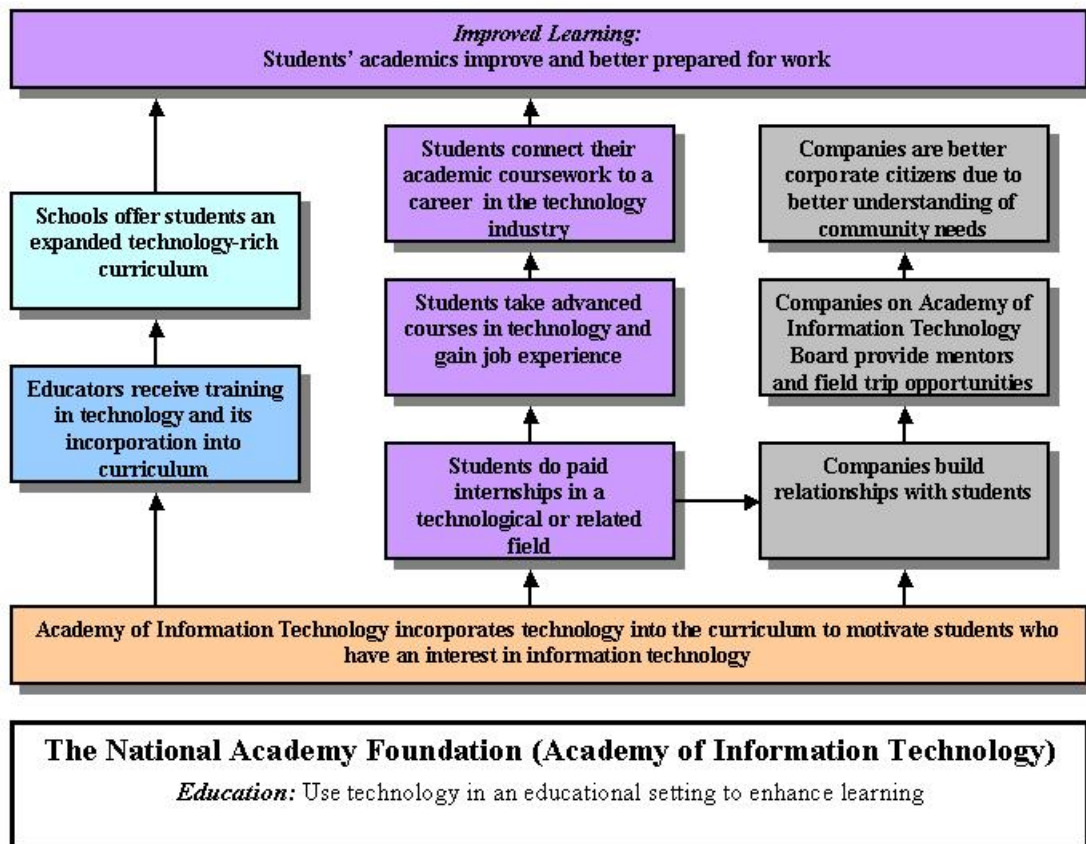
There are currently 32 MOUSE Squads operating citywide, providing services to over 40,000 teachers and students. The MOUSE Squad program is expected to grow to 55 schools by 2004. The first elementary school is being piloted this year. MOUSE hopes this will showcase the program's adaptability to all levels of the public school system. Furthermore, 87% of MOUSE Squad participants have stated that participation in the program has increased the likelihood of them pursuing an information technology-related career track.

## *The National Academy Foundation*

### Organizational Snapshot

ORGANIZATION	The National Academy Foundation
YEAR FOUNDED	2000
WEBSITE	www.naf.org
BUSINESS CATEGORY	Career Academy
ORGANIZATION TYPE	School
MISSION	Support the personal and career development of America's youth
POPULATION SERVED	Gr. 9–12
AVAILABILITY OF SERVICE	In School
TECHNOLOGY USED	Technology Curriculum
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

The National Academy Foundation (NAF) is a network of career academies and “schools inside of schools.” They are located in 40 states, 230 school districts and 483 individual schools. The National Academy Foundation supports three different career academies. They include the Academy of Finance, the Academy of Travel and Tourism, and the Academy of Information Technology (AOIT), which was first established in 2000.

### II. PROGRAM SPECIFICS:

AOIT breaks up larger schools into smaller learning communities that motivate students with an interest in information technology through a technology-rich curriculum. Students generally enter the academy in the 9<sup>th</sup> or 10<sup>th</sup> grade and continue until they graduate. Because class size is small, students form a tight-knit group and learn to work as a team.

*THE CURRICULUM* – AOIT students take one or more specialized courses each semester that focus on technology or the way that technology is used in related fields. Examples of courses that are offered are: Strategies for Success with Computer Applications, Web Page Design, Systems Support and Maintenance and Digital Media. Students also take at least two years of math, two years of foreign languages and a college level course.

*INTERNSHIPS* – Each student participates in a six to eight week paid internship, mostly with private companies in the information technology industry. The internship introduces students to all areas of the information technology field. In addition to the internship work, they participate in field trips, job shadowing, and mentoring. The mentoring often continues beyond the length of their internship.

*BENEFIT TO INDIVIDUAL SCHOOLS* – Collaboration with AOIT is also a positive step for individual schools. Because of the Academy’s augmented curriculum, schools are able to offer their students career-related courses and a network of professional connections. In addition, administrators and teachers receive professional development in the form of site visits, conferences, and online and printed professional development material. This ongoing assistance helps educators understand how to use technology to enhance learning in all subjects.

*BENEFIT TO COMPANIES* – Companies are connected to students, schools, and the issues with which they are faced through their participation in local New York City AOIT Advisory Boards and internships. In addition, companies provide schools with classroom guest speakers and student mentors, as well as opportunities for students to visit their companies. By working with the local AOIT Advisory Board, companies

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become better corporate citizens because they gain a better understanding of the needs of the community. In the end, the biggest benefit to the business sector is the development of qualified and skilled potential employees.

### III. PROGRAM RESULTS:

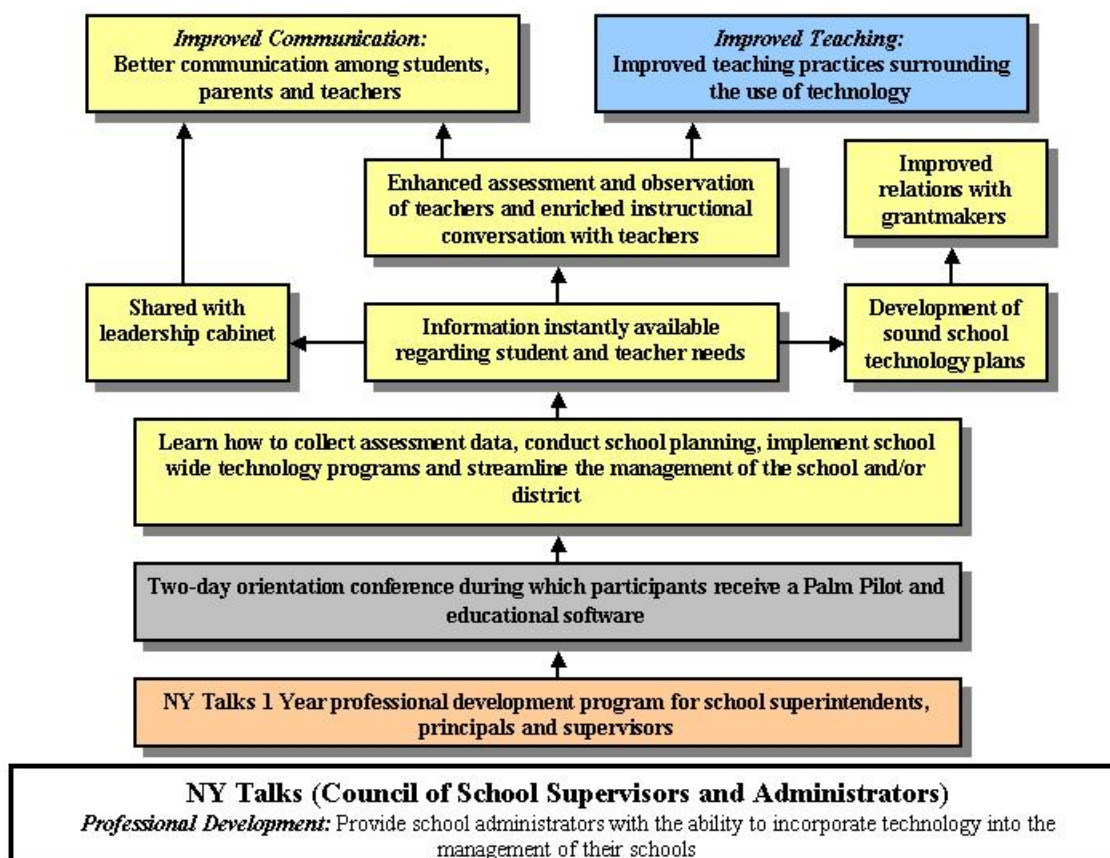
Though it is still too early to gauge the effectiveness of AOIT, some of the preliminary numbers are impressive. Of the students who enroll in the Academies, 100% graduate from high school and 50% have a four-year college degree within five years of graduation. According to a survey conducted in 2001, only 8% of the NAF students reported needing remedial assistance once in college compared to the college population at large, where about 20% need remedial assistance.

### *NY Talks (Council of School Supervisors & Administrators)*

#### Organizational Snapshot

ORGANIZATION	NY Talks (Council of School Supervisors & Administrators)
YEAR FOUNDED	2001
WEBSITE	www.nytalks.org
BUSINESS CATEGORY	Leadership Development Program
ORGANIZATION TYPE	Non-Profit Organization
MISSION	Help school leaders use technology as a catalyst for organizational growth and student achievement
POPULATION SERVED	Principals, Supervisors
AVAILABILITY OF SERVICE	Outside School
TECHNOLOGY USED	Palm Pilot, Websites
ANNUAL BUDGET	\$7.5 Million

#### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

NY Talks is a yearlong professional development program for school leaders to learn how to use technology to improve student achievement and to enhance their management skills. The program started with a grant from the Bill and Melinda Gates Foundation's State Challenge Grant for Leadership Development program – a national three-year program worth \$100 million. The Council of School Supervisors and Administrators (CSA) manages the grant for the New York City region.

### II. PROGRAM SPECIFICS:

*NY TALKS PROGRAM* – School management teams explore ways to combine the use of technology in the day-to-day management of schools and/or districts, as well as develop short-term and long-term strategies to improve student achievement. Every year, 400 CSA members -- mostly New York City school superintendents, principals and supervisors, are eligible to participate in this yearlong professional development program. NY Talks starts with a two-day orientation conference during which participants receive a *Palm Pilot* loaded with educational software. Members participate in a two-day regional leadership planning and technology workshop. Participating supervisors and principals learn how to collect, analyze and share data to create strategic plans, develop leadership strategies, implement school-wide programs and streamline school and/or district management. Participants also attend a technology fair that is held at CSA's first regional meeting and its annual conference.

*DISTANCE LEARNING* – Each NY Talks participant receives five free one-year site licenses to professional development distance learning programs from *Educational Impact Online*. These site licenses allow them to select from a library of professional development programs. Supervisors and principals can give members of their school access to *Educational Impact* so that its professional development content can be disseminated widely among school staff.

*TAGLIT* – Supervisors and principals also learn how to use a survey called *Take a Good Look at Instructional Technologies* (TAGLIT<sup>1</sup>). Administrators and teachers can use this anonymous survey to help determine the technology needs within their school. The results of this survey provide supervisors with information about how teachers and students perceive technology and how they think technology should be used. Using the information gathered from the TAGLIT survey, principals can write more effective technology plans, which can then be incorporated into grant proposals to fund future technology initiatives.

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<sup>1</sup> <http://www.taglit.org/taglit/login.aspx>.



III. PROGRAM RESULTS:

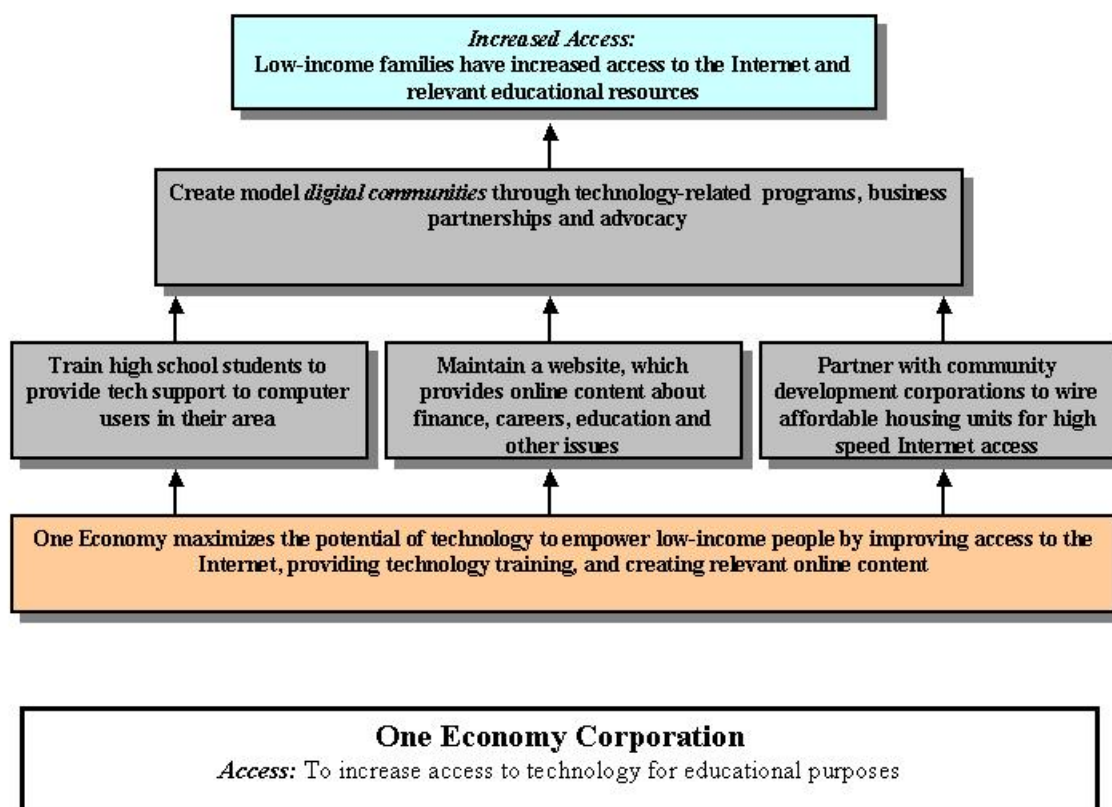
Preceding every conference and every workshop, a written evaluation diary is administered to all participants. Participants are asked a range of questions including whether the course enhanced their skills and, if so, what skills were enhanced. The diaries are entered into a computer and results are returned to CSA. CSA is receiving positive results from the surveys and has noticed that assistant principals are networking among one another to share information and management practices. Assistant principals have reported satisfaction with the software provided in NY Talks because it helps them be more productive. They also think that the *Palm Pilot* makes teacher assessments easier and more effective.

## One Economy Corporation

### Organizational Snapshot

ORGANIZATION	One Economy Corporation
YEAR FOUNDED	2000
WEBSITE	www.one-economy.com
BUSINESS CATEGORY	Access Provider, Tech Support, Content Development
ORGANIZATION TYPE	Non-Profit Organization
MISSION	Maximize potential of technology to help low-income people build assets and raise their standard of living
POPULATION SERVED	Low-Income Families
AVAILABILITY OF SERVICE	Affordable Housing Units
TECHNOLOGY USED	Broadband via Cable and Wireless, Websites, Help Desks
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

One Economy Corporation is a non-profit organization whose mission is to maximize the potential of technology to help low-income people build assets and raise their standard of living. One Economy's strategy to achieve their mission is two-fold: to focus on facilitating access to high-speed Internet access and to create relevant online resources for low-income families.

### II. PROGRAM SPECIFICS:

*ACCESS* – One Economy strives to change policy at the state government level so that all new affordable housing is wired for high-speed Internet access at the time of construction or gut renovation. One Economy has also partnered with the private sector, community-based non-profit organizations and public housing authorities to help wire existing affordable housing units with broadband Internet access. They also maintain a *Digital Access Fund* that gives low-interest loans to nonprofit organizations to subsidize the purchase of technology.

*CONTENT* – One Economy also believes that relevant online content is critical to making technology meaningful and beneficial to low-income families. They have developed a website called the Beehive, [www.beehive.org](http://www.beehive.org), which contains a vast collection of online resources geared towards low-income families. Written at a 5<sup>th</sup> – 6<sup>th</sup> grade literacy level and available entirely in English, Spanish, Urdu, Russian and Haitian Creole, the site connects people to information about health, jobs, money and education. For example, users can learn about purchasing car insurance, opening a bank account and writing a resumé. Many sections of the Beehive are highly interactive, allowing users to request information and contact outside organizations for services. Geared primarily towards adults, the Beehive also contains a section where students can receive homework help. Although much of the material on the site is universal, there are also several localized versions of the site, which have information specific to a particular city or region. Many localized versions of the Beehive have information about local low-cost housing, childcare providers, as well as banks and credit unions. One Economy plans to roll out more localized versions of the Beehive.

*TECH SUPPORT* – One Economy has addressed the issue of technical support through a program called *Digital Connectors*. This program trains high school students to provide technical support to computer users in their area. It not only allows these students to develop skills that they can put to use later in life, but it also provides low-income communities with a necessary service. The participants provide basic computer repair services, training on the navigation of the Beehive at local community technology centers, as well as one-on-one computer instruction within senior centers.

III. PROGRAM RESULTS:

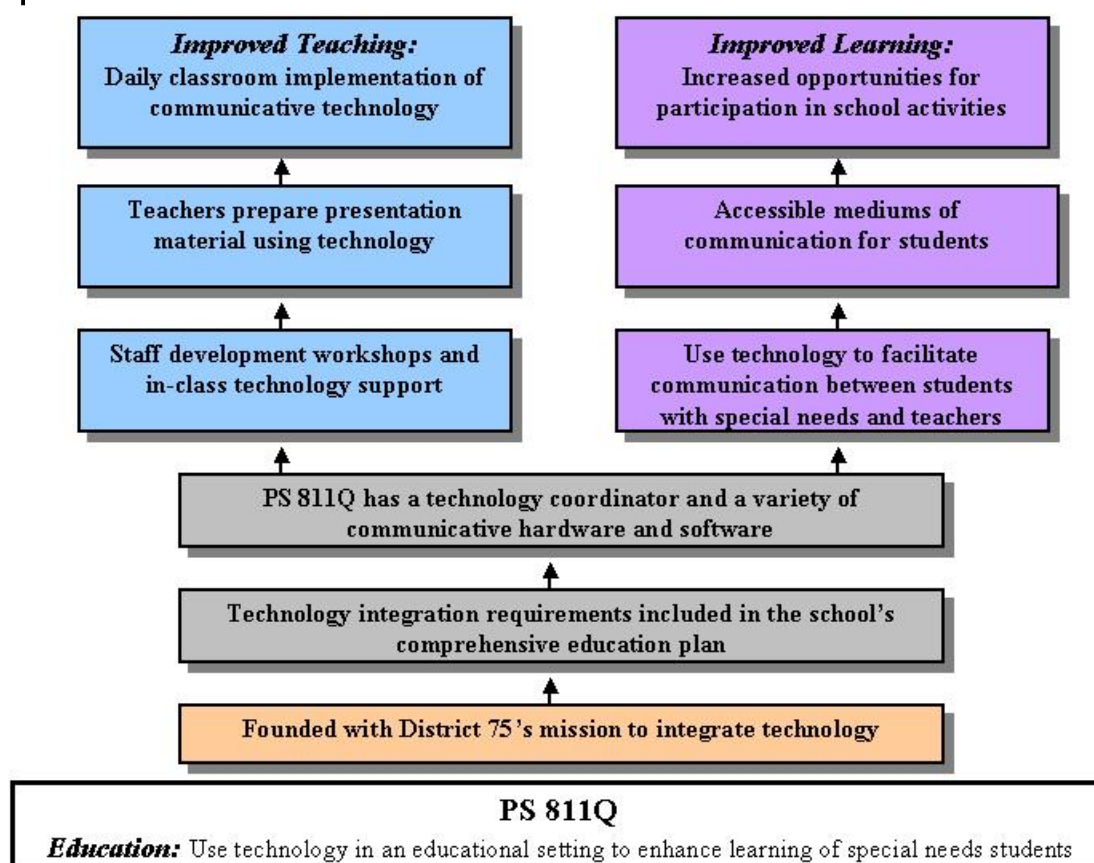
In eight different communities across the nation, One Economy has partnered with various community-based organizations to model how technology can transform the lives of low-income people. It has concentrated its efforts in these *Digital Communities* to affect policy, provide wiring to affordable housing units, deliver youth training, as well as develop resources specific to these communities. One Economy has successfully advocated for policy changes in ten states and localities around the wiring of new and gut-renovated affordable housing with high-speed Internet service. It has delivered 250 computers through its *Digital Access Fund*. One Economy's website, the Beehive, currently reaches about 100,000 users a month from all over the country. And it has trained 100 young people through the *Digital Connectors* program, who in turn have provided about 4,800 hours of service to their communities.

## PS 811Q

### Organizational Snapshot

ORGANIZATION	PS 811Q
YEAR FOUNDED	
WEBSITE	www.nycenet.edu
BUSINESS CATEGORY	Public School
ORGANIZATION TYPE	School
MISSION	Use technology as an educational tool as well as a functional medium of communication
POPULATION SERVED	Gr. K-12, Special Needs Students
AVAILABILITY OF SERVICE	In School
TECHNOLOGY USED	Modified Keyboards, Touch Monitors, Switches
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

PS 811Q is a District 75 school, located in Queens, serving K – 12 students with varying special needs (e.g., visually impaired, hearing impaired, autistic, emotionally disturbed, physically handicapped, cognitively handicapped, etc). PS 811Q uses technology to enable all students to become independent participants within their communities by promoting challenging educational opportunities in the classroom.

### II. PROGRAM SPECIFICS:

*RESOURCES* – Technology integration at PS 811Q began with a school-wide commitment. A major issue for many of these students is the need for communicative technology due to their physical, emotional or cognitive handicaps. The students at PS 811Q use a wide range of low-tech devices to aid communication. One example of such a device is a switch. The switch comes in many forms, but is basically a single button that can be pressed to activate a certain function, such as responding with a pre-recorded response to a teacher's question or playing a computer game. For students with physical handicaps or limited speech, the switch helps them participate fully in the classroom. Another example of a low-tech communication device is a touch window where students can work directly on the computer screen without having to use a mouse.

Students also have access to software programs such as *IntelliPics* and *Hyperstudio* to create interactive projects. The computers at PS 811Q have modifications that allow students to access these programs more easily, including enlarged keyboard letters and keyboards with pictures and words rather than letters and numbers. The modifications vary according to the student's physical or cognitive need.

*STAFF DEVELOPMENT* – Technology integration is a major component in the school's mission and is a clearly outlined expectation for all staff. Teachers receive technology-related professional development on a weekly basis. The school also has technology staff that provides in-class support through hardware/software maintenance. The sharing of curriculum integration ideas also happens on a regular basis.

*ENGINEERING IN THE CLASSROOM* – In a program developed by Dr. Carol Goossens, teachers create interactive computer-generated story/display boards to aid in presenting subject matter in their classrooms. Teachers are expected to use these tools on a daily basis, and the use of technology is a component of formal classroom observations by school administrators.

III. PROGRAM RESULTS:

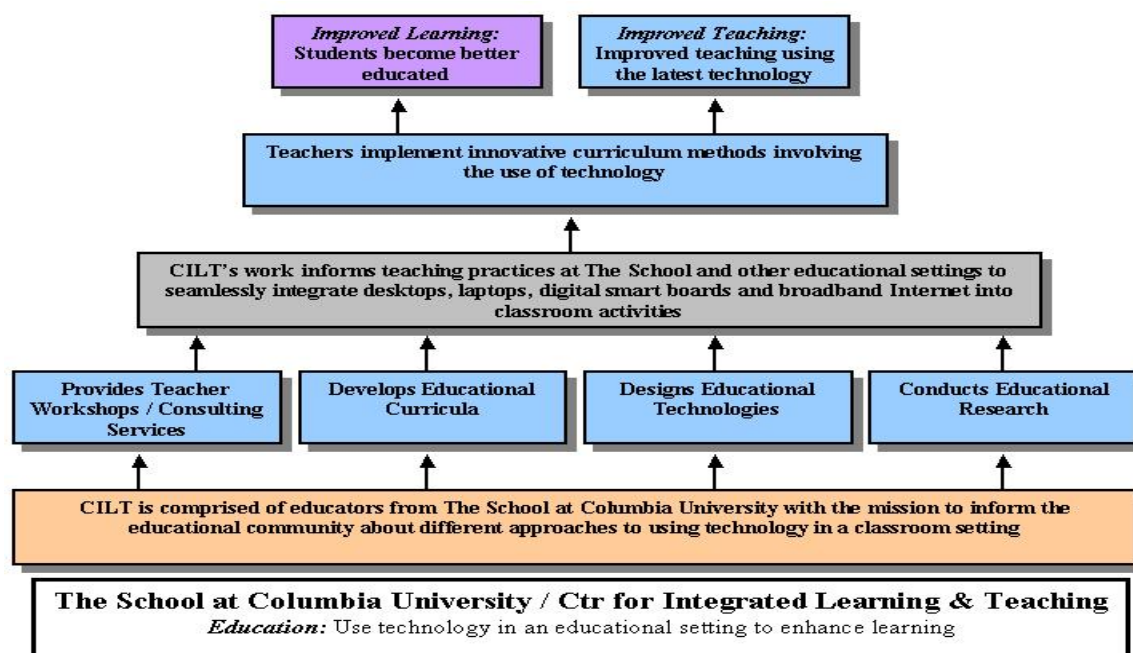
Progress of students at PS 811Q is assessed through use of an Individualized Education Plan (IEP) that outlines student goals and progress towards those goals, along with suggested modifications to the IEP. PS 811Q uses mastery of IEP goals as a measure of evaluating the effectiveness of its technology infusion efforts. To gauge the effectiveness of the *Engineering the Classroom* program, the school administers a pre- and post-assessment questionnaire to teachers, surveying them about the skills they gained, while incorporating this program into their classroom instruction.

## *The School at Columbia University / The Center for Integrated Learning and Teaching*

### Organizational Snapshot

ORGANIZATION	The School at Columbia University / The Center for Integrated Learning and Teaching
YEAR FOUNDED	2003
WEBSITE	theschool.columbia.edu
BUSINESS CATEGORY	School, Professional Development, Curriculum / Content Development
ORGANIZATION TYPE	School / Non-Profit Organization
MISSION	Dedicated to presenting children with genuine educational opportunities through the development of innovative curricula and pedagogies anchored in established practice and emerging research
POPULATION SERVED	Gr. K-8, Educational Community
AVAILABILITY OF SERVICE	In School, At Home
TECHNOLOGY USED	Desktop Computers, Laptop Computers, Digital Smart Boards, Digital Cameras, Digital Video, Document Cameras, Videoconferencing
ANNUAL BUDGET	

### Impact Model





## Profile

### I. INTRODUCTION TO ORGANIZATION:

The School at Columbia University is a private school that opened in the summer of 2003. The School is an experimental learning community for teachers and students affiliated with Columbia University. The core of professional activity at the School is *The Center for Integrated Learning and Teaching* (CILT). CILT is an association of educators and educational technologists within the school that conducts research, designs and implements curriculum, develops educational technologies and provides professional development opportunities for teachers.

### II. PROGRAM SPECIFICS:

*CURRICULUM* – Currently consisting of K – 4<sup>th</sup> grades, the school will eventually serve students in K – 8<sup>th</sup> grades. The student body is about 50% Columbia-affiliated (i.e., children of faculty or staff at Columbia University). The other 50% of students come from the local community and are selected by lottery. Many of these students are offered generous scholarships to attend the School. Class sizes are small, about 17 – 20 students each. The curriculum at the school is united by grade level themes and concepts, such as the study of Civilization, Structure in Nature, or the Five Senses, rather than isolated academic disciplines, such as math or science. Competency in various disciplines is developed through the exploration of these themes. The visual and performing arts, as well as foreign languages, are incorporated throughout learning activities during and after school. Activities are based on the philosophy that students learn best by doing. Thus, students are engaged in activities that require them to think critically, communicate with others, as well as analyze and reflect.

*TECHNOLOGY* – The use of technology is not viewed as a separate activity that children engage in, but rather one of several tools for learning. Various educational technologies, new media, other forms of digital communication as well as the latest hardware are included in classroom activities to help bring a global perspective into the classroom and allow learning to extend beyond the walls of the school or the boundaries of the community. Kindergarten classrooms contain desktop computers, while 1<sup>st</sup> – 4<sup>th</sup> grade classrooms are equipped with laptop computers. Once the 5<sup>th</sup> – 8<sup>th</sup> grades are added to the school, the plan is to allow students in these grades to take their laptops home. In addition, teachers have the option of using various other technologies, such as digital smart boards instead of traditional chalkboards to engage the class in-group activities.

*PROFESSIONAL DEVELOPMENT* – All teachers within the school are active participants in the activities of CILT. Internally, CILT runs small group workshops that include Essentials for New Media Usage in the Classroom, Collaborative Curriculum Design,

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Web-based Educational Elements and Interactivity, Multimedia Design and Lesson Planning and Student Digital Assessment. In the future, there will be opportunities for participation by outside educators in the School and CILT in the form of internships, externships, and fellowships. CILT will also offer training in many of the aforementioned concepts and approaches, including the above workshops, through its consulting practice. CILT will also work with other classroom teachers and school administrators to enhance their efforts at designing and implementing tools and strategies that are appropriate for their schools.

### III. PROGRAM RESULTS:

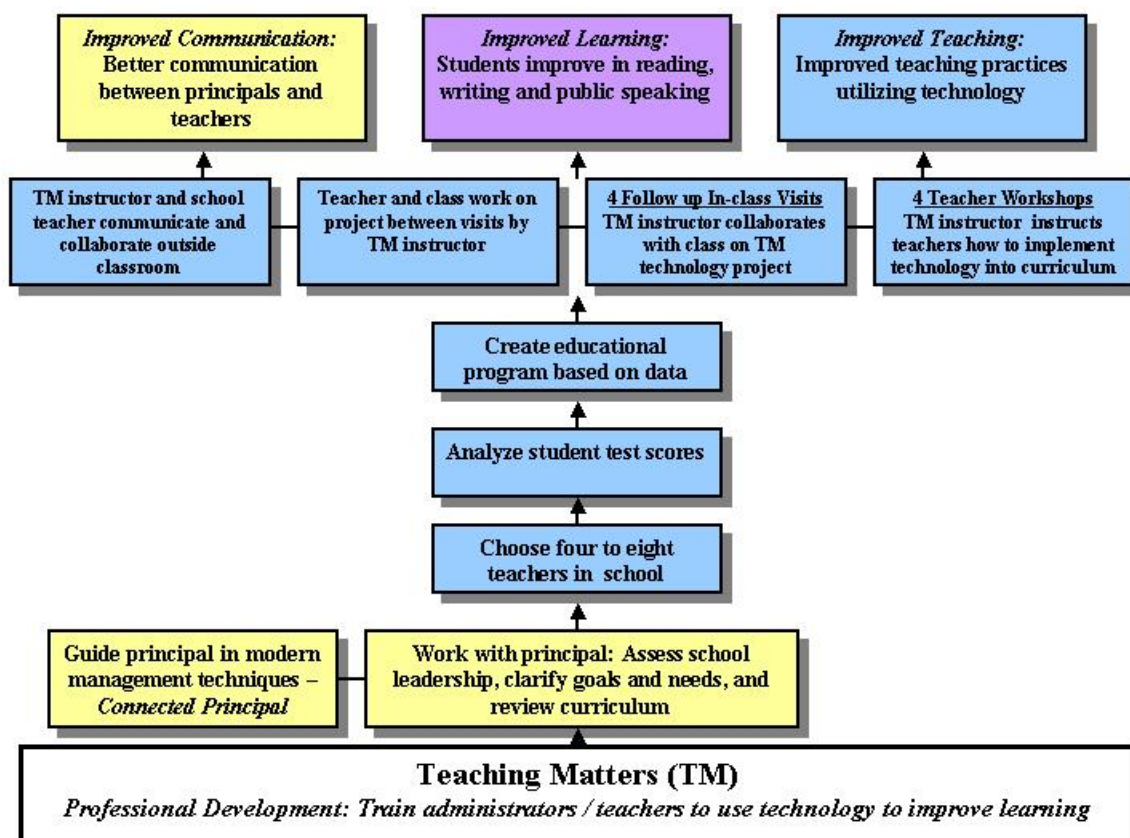
Activities at the School are still in the beginning stages. As the School increases the use of technology in learning and teaching, the School and CILT will assess the impact on student learning on a regular basis.

## Teaching Matters

### Organizational Snapshot

ORGANIZATION	Teaching Matters
YEAR FOUNDED	1994
WEBSITE	www.teachingmatters.org
BUSINESS CATEGORY	Professional Development
ORGANIZATION TYPE	Non-Profit Organization
MISSION	Train administrators and teachers to use technology in schools to improve student learning
POPULATION SERVED	Gr. K-12
AVAILABILITY OF SERVICE	In School, Outside School
TECHNOLOGY USED	I-Movie
ANNUAL BUDGET	\$1.8 million

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

Teaching Matters was established as a non-profit organization in May of 1994, and uses technology to provide professional development and to develop innovative classroom-based educational programs. Teaching Matters' mission is to partner with principals and teachers, and teach them how to use technology to improve student learning.

### II. PROGRAM SPECIFICS:

Teaching Matters develops K – 8 classroom-based educational programs utilizing technology. Teaching Matters starts working with a school by assessing the school's resources, skills and goals. It then works with each principal to provide guidance in the day-to-day management of the school as well as to help them outline concrete objectives for their collaboration. This program is called the *Connected Principal*. In consultation with Teaching Matters, each principal selects a core group of four to eight teachers per school to participate in the Teaching Matters program, primarily based on a teacher's ability to promote active learning throughout his or her curriculum. Starting with a core group of teachers helps keep the project manageable and creates a model for other teachers in the school to follow. The Teaching Matters instructor works with this core group of teachers to plan the educational technology project, to define each teacher's goals for the next three months, and to structure a learning unit based on his or her current curriculum. The Teaching Matters instructor teaches several lessons alongside the regular classroom instructor to support students and teachers as they implement the educational technology program. During the course of the project, the regular classroom teachers are also provided with professional development opportunities in the form of four workshops conducted by Teaching Matters outside the classroom.

*DIGITAL LITERATURE* – *Digital Literature* is a program that involves students taking a piece of text and using the tools of technology to create an entire movie, while teaching and reinforcing the essential skills of reading, writing, public speaking and teamwork. Students read and comprehend a storybook, write their own script based on that storybook, draw the characters on the computer, and finally, animate the entire play. The project is a multi-disciplinary affair, involving the use of computer teachers, art teachers, music teachers and English teachers. Students learn the skills of self-management and teamwork, while at the same time, learning content approved by the New York State educational curriculum standards.

*DIGITAL DOCUMENTARIES* – *Digital Documentaries* is a program to help students learn history. Similar to the *Digital Literature* program, students research, direct and produce their own videos. However, in the *Digital Documentaries* program, students examine

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major historical events while meeting New York State social studies and language arts requirements for 4<sup>th</sup> – 12<sup>th</sup> grades.

*ELECTION CONNECTION* – *Election Connection* is a civics program created by Teaching Matters and jointly taught by a Teaching Matters instructor and the middle school civics teacher. This program introduces 6<sup>th</sup> – 8<sup>th</sup> graders to the democratic process and teaches students how candidates, pollsters, and campaign managers seek to inform, change and sway public opinion. Students simulate a political campaign, study and debate the issues, analyze polling data, draft hearing testimony, write letters to elected officials, monitor media coverage, participate in a Town Meeting and cast their votes online.

### III. PROGRAM RESULTS:

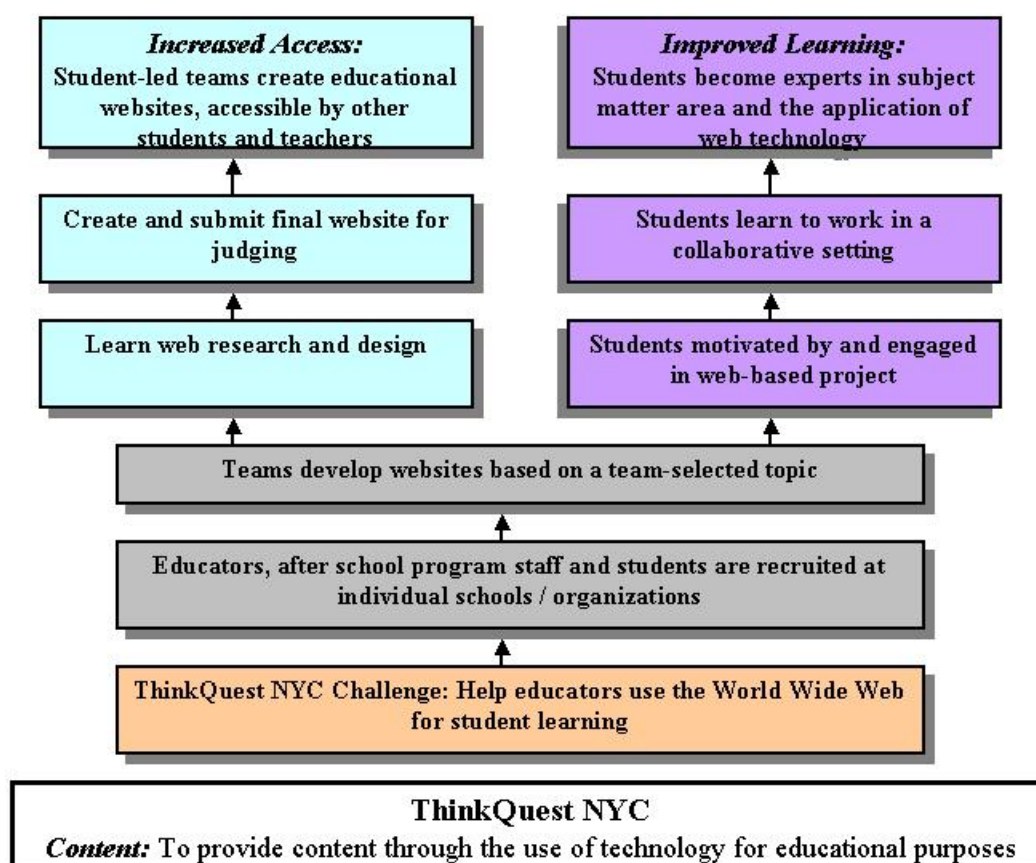
Teaching Matters has provided professional development and in-class programs to over 500 schools, 6,000 teachers and 400 Principals. It has also developed pedagogical practices and educational technologies to make learning how to read easier for children. In recognition of its work, Teaching Matters recently received an *Excellence in E-Learning Award* from *Brandon-Hall* and *Online Learning Magazine*.

## ThinkQuest NYC

### Organizational Snapshot

ORGANIZATION	ThinkQuest NYC
YEAR FOUNDED	1995
WEBSITE	www.tqnyc.org
BUSINESS CATEGORY	Training, Advocacy
ORGANIZATION TYPE	Non-Profit Organization
MISSION	Creatively teaching students and teachers to use web technology in the pursuit of learning
POPULATION SERVED	Gr. 4-12
AVAILABILITY OF SERVICE	In School, After School
TECHNOLOGY USED	Website
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

ThinkQuest is a nonprofit organization that works in over 100 countries and 37 states. It is dedicated to bringing web technology to schoolchildren in a creative manner. ThinkQuest NYC is based on the international ThinkQuest program and works with students in the New York City public schools. There are three major components to ThinkQuest NYC's program: the citywide *ThinkQuest NYC Challenge*, the *Coaches Training Program* for educators and the *After-School Grant Program*.

### II. PROGRAM SPECIFICS:

*ThinkQuest NYC CHALLENGE* – The ThinkQuest NYC challenge is founded on the idea that the Internet is a powerful, engaging resource for communication and the sharing of information. ThinkQuest NYC trains students and teachers in the use of web technology to produce educational websites. The purpose of the ThinkQuest NYC Challenge is to teach students and teachers important technology skills while producing valuable educational resources accessible to anyone via the Internet.

*TRAINING AND SUPPORT* – The first step to launching ThinkQuest NYC teams is the recruitment of teachers, then providing them with free training in web design and publishing, Internet research, as well as management and collaboration techniques. After completing training, the teachers become ThinkQuest NYC coaches. Currently, the majority of coaches are the technology teachers of their respective schools, but ThinkQuest is looking to recruit teachers from other subject matter areas. Next, the teacher/coaches recruit students to form the ThinkQuest Challenge team, up to six students per team. At this point, the students take the lead and teachers take on a guidance role. Throughout this process, ThinkQuest NYC provides support for coaches and their teams with rulebooks, printed instruction manuals, downloadable tutorials, free software and an assessment tool outlining evaluation criteria for the Challenge.

*WEB PAGE DESIGN* – After registering, teams pick a topic from among five categories: Arts and Literature, Interdisciplinary, Science and Math, Social Science and Sports and Health. Students on each team develop the content of the website, as well as learn technical skills through the building of a site map for the website and the editing, updating and publishing of the final web page. Through the process of designing and conducting research, students learn to ask important and relevant questions to produce a final product, improving their critical thinking skills. The final web page is submitted for evaluation by a panel of judges. Judging is based on educational value, depth of content, technical quality and accessibility of the website. All final products are published and can be accessed through the ThinkQuest NYC Library ([www.tqnyc.org/library](http://www.tqnyc.org/library)). Winners of the *ThinkQuest NYC Challenge* receive awards

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ranging from notebook computers and digital cameras to certificates of purchase for schools to address their technology needs. Past winning websites include: *New Rockets for NASA*, *Con <\_> TEXTS: "Reading" Migrations through Art* and *Using the Conflict-Resolution Approach to Analyze Literature*. Other completed websites cover such topics as aviation, Greek Mythology, the solar system and New York City landmarks.

### III. PROGRAM RESULTS:

As a relatively new program in New York City, ThinkQuest NYC measures its effectiveness by the number of participants. In the 2002 – 2003 academic year, there were over 900 student participants, over 300 coaches, and approximately 250 teams representing over 60 public schools. ThinkQuest NYC has also trained over 200 New York City educators and program staff members.

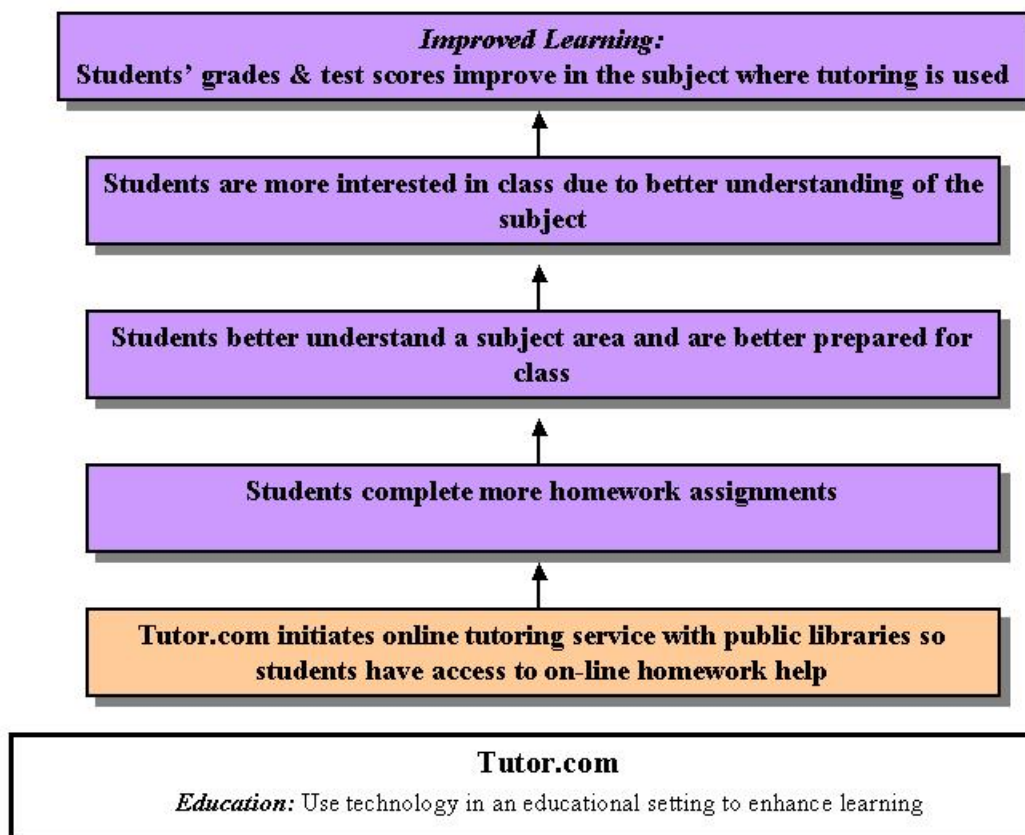


## ***Tutor.com***

### **Organizational Profile**

ORGANIZATION	Tutor.com
YEAR FOUNDED	1998
WEBSITE	www.tutor.com
BUSINESS CATEGORY	Online Tutoring Service
ORGANIZATION TYPE	For-Profit Organization
MISSION	To improve students' school performance through the use of high-quality real-time Internet-based tutoring
POPULATION SERVED	Gr. 4-12
AVAILABILITY OF SERVICE	After School, Public Libraries
TECHNOLOGY USED	Websites, Online Classroom
ANNUAL BUDGET	

### **Impact Model**



## Profile

### I. INTRODUCTION TO ORGANIZATION:

Tutor.com provides one-to-one, on-demand, learning and information solutions for libraries, after-school organizations (e.g., Boys and Girls Clubs) and a small number of individuals who purchase the service for personal use. Experts in most subject areas are available 24 hours a day, 7 days a week for homework help. Generally, Tutor.com's link to students is through local public libraries. Thus, it is able to serve kids who normally do not have access to computers, homework assistance or even much one-to-one interaction with educators. In New York City, Tutor.com has formed a partnership with the Queens Borough and Brooklyn Public Library systems.

### II. PROGRAM SPECIFICS:

Nationwide, 1,200 students a day, in over 500 public libraries, access homework help from 2:30 p.m. – 1:00 a.m. Assistance is offered to students in 4<sup>th</sup> – 12<sup>th</sup> grades in English and Spanish.

*USING THE SYSTEM* – The three-step system is very simple. First, students click on a homework help icon on the library's website. Second, they put in their grade and the subject with which they want help. Third, students are connected to a live tutor within 45 seconds of making their request. The subjects covered include math, science, social studies, English and foreign languages such as Spanish and French. Each of these subject areas has subcategories about which the student can ask questions. Once the students are connected to a tutor via the Tutor.com website, they can chat, share documents, and use an online white board to illustrate ideas and concepts. Virtual classroom sessions generally last an average of 20 minutes.

*THE TUTORS* – Tutors are subject area experts and must pass a background check. After an initial training period with a mentor, tutors are offered ongoing skill enhancement training, as well as professional development opportunities. All tutors work out of their homes. Interestingly, because the tutor and student never meet, any sort of prejudice or preconceived ideas that might hinder the classroom session from being productive is often eliminated.

*FUNDING* – Tutor.com relies on contributions from libraries (usually less than 25% of the cost) while the remaining cost of service is funded by outside sources, such as private foundations or corporations. Tutor.com works closely with libraries to match them with existing funds. Usually, each library pays about \$10,000 a year for the service, though the cost of the service varies based on anticipated use.

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*SUPPORT SERVICES* – Tutor.com offers a variety of support services to each participating institution, including fundraising assistance and technical assistance. It also helps its partners develop promotional materials and compile monthly management reports that detail how many students used Tutor.com's services and what kind of assistance they were seeking.

### III. PROGRAM RESULTS:

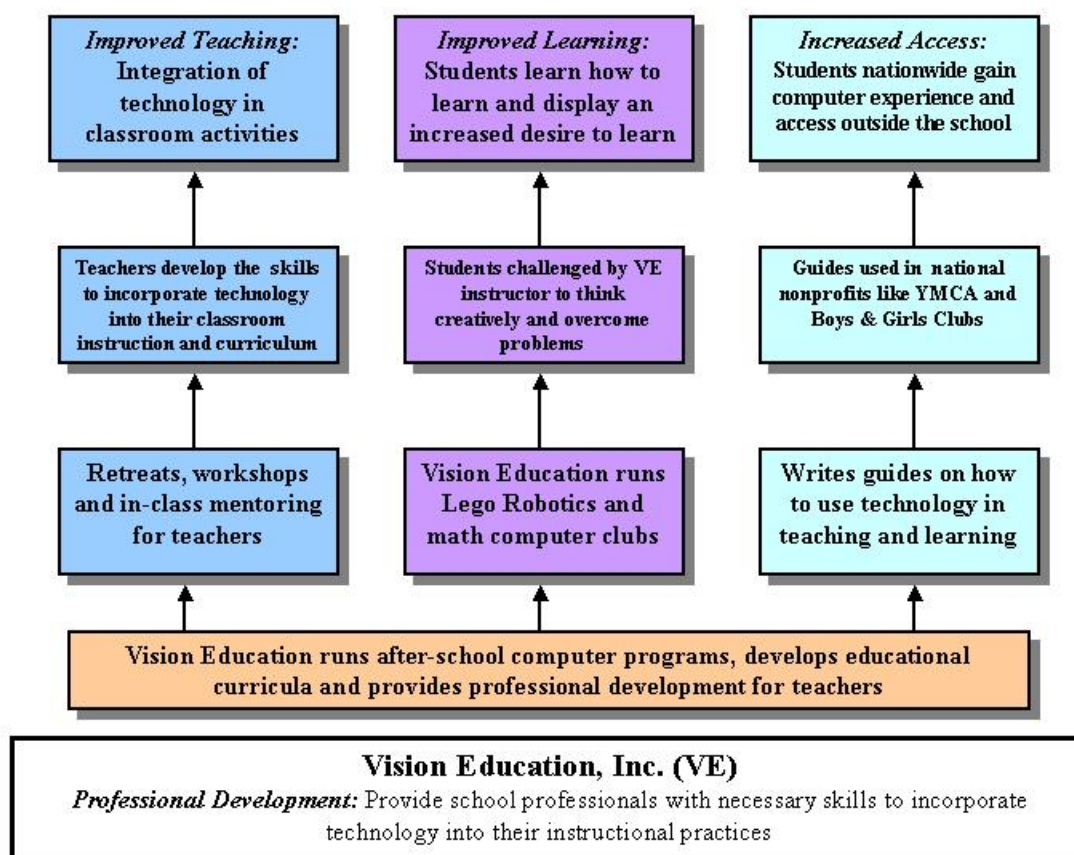
Tutor.com has no real assessment tool to track students' improved grades or test scores, largely because of confidentiality constraints from libraries that prevent it from knowing exactly who its users are. The company does, however, ask each user to fill out a satisfaction survey at the end of their session. About 40% of clients fill out the survey and about 94% of them are very satisfied with the help they received. To ensure the safety of the students and quality of the tutors, Tutor.com maintains a log of every classroom session. Anecdotally, most students report an improvement in their classwork. Students also report a renewed interest in school due to better preparedness and participation in class.

### *Vision Education, Inc.*

#### Organizational Snapshot

ORGANIZATION	Vision Education
YEAR FOUNDED	1997
WEBSITE	www.visioneducation.com
BUSINESS CATEGORY	Educational Technology Consulting
ORGANIZATION TYPE	For-Profit Organization
MISSION	Bring creative educational technology into the classroom
POPULATION SERVED	Gr. K-12
AVAILABILITY OF SERVICE	In School, After School
TECHNOLOGY USED	Lego Robotics, MicroWorlds
ANNUAL BUDGET	\$.58 million

#### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

Vision Education (VE) is a technology consulting company that provides technology services to schools, teachers and students. It operates after-school computer clubs, provides professional development for teachers and develops curricula for national community programs. The company was founded in 1997 with the mission of bringing creative educational technology solutions to teachers, students, and administrators in schools and community-based organizations.

### II. PROGRAM SPECIFICS:

Vision Education conducts business with the New York City Public Schools in three areas: after-school computer clubs, teacher professional development and curricula development. Vision Education believes that it is important to take small steps when integrating technology into classroom learning. Therefore, it will often either teach the introductory lesson or give the teacher the opportunity to teach the first technology lesson with guidance from a trained VE staff member. The company emphasizes a hands-on problem solving and project-based approach to learning, with the aim of challenging students to think creatively, apply learned concepts and actively discover how to learn. In implementing its programs, Vision Education mostly hires independent contractors who have either a Master's Degree or a PhD in education, fine arts or the media arts.

*AFTER-SCHOOL COMPUTER CLUBS – LEGO Robotics Clubs* are after-school programs in which students use *LEGO* bricks and other elements, such as sensors, motors, and gears to build robotic devices. Student teams gain hands-on experience in engineering and computer programming as they construct and program their robot inventions. After completing construction of their robots, student teams from schools citywide move on to participate in New York City's *LEGO League Robotics Tournament* at Polytechnic University. The tournament involves over 50 teams, who present their robots for judges and the general public. Other after-school clubs include the Writer's Workshop, MicroWorlds, Math Games and the Multimedia Workshop. In addition to teaching content, Vision Education's after-school programs teach students the following important skills: reading, writing, drawing, goal setting, teamwork, interpersonal communication and problem solving.

*TEACHER PROFESSIONAL DEVELOPMENT* – Vision Education places a Technology Mentor in a school to provide ongoing and on-site support for teachers. It also offers on-site and off-site individually tailored technology workshops for teachers. These include learning computer basics, classroom management while using technologies, and implementing technology successfully into a curriculum. Vision Education also

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organizes the *Stonington Retreat*, a technology retreat for teachers held in Maine. At this retreat, teachers participate in organized lessons, demonstrations and lectures culminating in the creation of one to three new projects – usually lesson plans and curriculum materials incorporating technology and immediately usable in their classrooms.

*CURRICULUM DEVELOPMENT* – Vision Education has created a series of technology-focused materials for the Boys and Girls Clubs of America. Its guides have been distributed to over 2,500 clubs serving over 3 million youth throughout the USA and Canada. These guides include the *Getting Started with Technology Resource Book* and the *Core Area Programs Resource Guide*, which includes 50 quick-start lessons, for students ages 5 – 18. Vision Education also founded *TechGYRLS*, a program used around the nation at YMCAs to help inner-city girls become engaged in technology to build self-esteem.

### III. PROGRAM RESULTS:

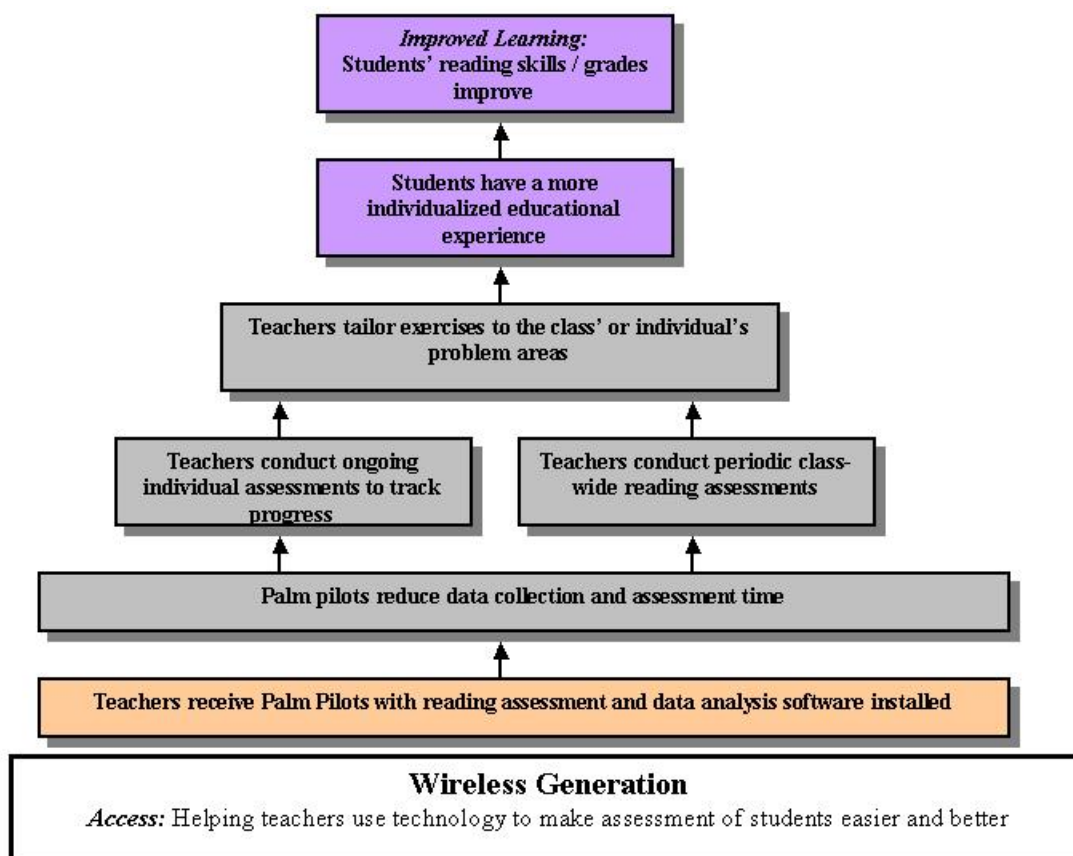
Vision Education's work in after-school computer programs, particularly *LEGO Robotics*, has won numerous awards for innovative, creative and outstanding project-based learning.

## Wireless Generation

### Organizational Snapshot

ORGANIZATION	Wireless Generation
YEAR FOUNDED	2000
WEBSITE	www.wirelessgeneration.com
BUSINESS CATEGORY	Educational Services
ORGANIZATION	For-Profit Organization
MISSION	Give teachers technology (e.g., personal digital assistants or PDAs) that will make a difference in their teaching
POPULATION SERVED	Gr. K-3
AVAILABILITY OF SERVICE	In School
TECHNOLOGY USED	PDAs, Reading Software, Websites
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

Wireless Generation gives educators technology tools that enhance their teaching practices. The company trains teachers how to use handheld computers or personal digital assistants (PDAs) to make mandated reading assessments more efficient and productive. Currently, Wireless Generation's solutions are primarily used for K – 3<sup>rd</sup> grade classrooms.

### II. PROGRAM SPECIFICS:

Last year, Wireless Generation worked with 1,200 schools in 10,000 classrooms across the country. During the 2003 – 2004 school year, the company will reach approximately half a million students with their assessment tools. Their technology makes it easier for teachers to make instructional choices on how to best help their students based on solid data. The products also decrease the time it takes for teachers to complete their assessments, usually by about 60%.

*THE TECHNOLOGY* – Wireless Generation has created a solution known as *mCLASS* (mobile classroom assessment) to create computer versions of regularly used reading assessments. This assessment program is then put on a handheld computer and given to teachers to use in their classrooms. Paper-based assessments can now be completed on the handheld. Thus, an instructional activity that was once paperwork intensive, with low or moderate usefulness, instantly becomes useful due to the increased efficiency of completing this task. Additionally, the solution is easy to use and aids in teaching. Because teachers have assessment data immediately, they are able to analyze the results for each student, giving them the ability to individualize their instructional practices. Results and data also go to a secure website so that information and results can be shared with other teachers and administrators. Teachers can also conduct smaller assessments on an ongoing basis to see how certain students are progressing and to evaluate the effectiveness of certain activities in addressing a student's weakness(es).

*PROFESSIONAL DEVELOPMENT* – Executives at Wireless Generation realized that the success of their programs depends on the interest of teachers in using their products. The PDA and related software is designed to be easy for teachers and administrators to use. In-person training is provided to every staff person who will use the company's technology (PDAs). This training lasts for 1 – 2 days. Teachers also have access to ongoing web-based professional development tools that focus on instructional planning and support, as well as training on intervention activities for common student problem areas.



## Part II: The Profiles – Profiles of Innovators and Leaders Who Make a Difference

*FUNDING* – Wireless Generation contracts with individual school districts. Application services are based on annual subscriptions and pay-per-student basis. The cost includes installation, tech support, technology training and unlimited phone and email support. To reduce maintenance problems, the company checks in with subscribers on a regular basis to make sure that its services are satisfying the primary users, school administrators and, most importantly, teachers.

### III. PROGRAM RESULTS:

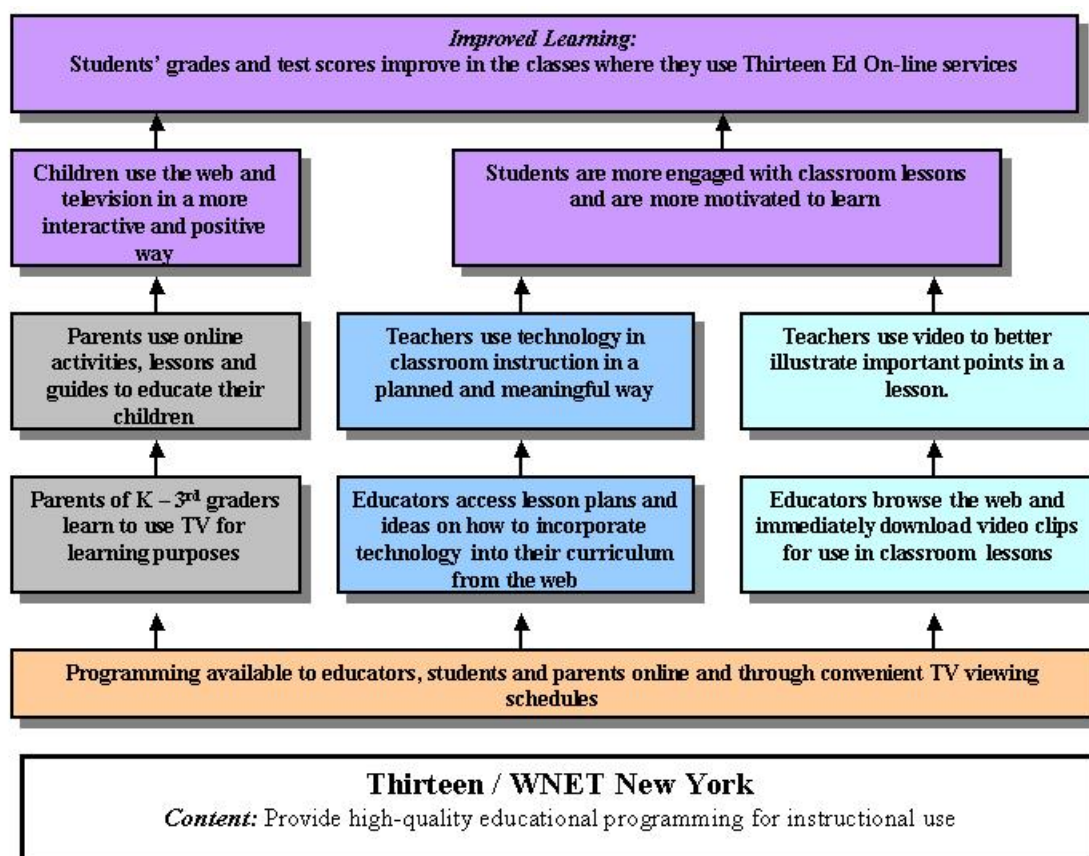
One of the ways that Wireless Generation measures the success of its products is by the amount of time saved by teachers when using the PDAs. The company also tracks how teachers use the data to individualize their instruction through surveys and testimonials. Currently, formal long-term evaluations are underway in some states regarding the efficacy of Wireless Generation's programs.

## Thirteen / WNET New York

### Organizational Profile

ORGANIZATION	Thirteen / WNET New York
YEAR FOUNDED	1963
WEBSITE	www.thirteen.org
BUSINESS CATEGORY	TV Broadcasting
ORGANIZATION TYPE	Public Television
MISSION	Provide high quality educational programming for instructional use
POPULATION SERVED	Gr. Pre K-12
AVAILABILITY OF SERVICE	In School, After School
TECHNOLOGY USED	TV, VCR, Internet
ANNUAL BUDGET	

### Impact Model



## Profile

### I. INTRODUCTION TO ORGANIZATION:

Thirteen/WNET New York's Education Department provides a wide range of educational resources for K-12 educators, parents and students, all of which expand the impact of our television programming. The three main areas covered are:

- 1) Television programming and video content provided FREE via broadcast, online streaming/downloading;
- 2) Professional development and training in technology for teachers and administrators; and,
- 3) Workshops for parents and caregivers on how to enhance a very young child's educational experience with television.

Thirteen Ed Online at [www.thirteen.org](http://www.thirteen.org) provides free online access to Information on all of these services plus supplemental lesson plans and related content.

### II. PROGRAM SPECIFICS:

*VIDEO-ON-DEMAND / PROGRAMMING* – Online there are more than 2,000 instructional videos covering all subject areas. They are broken up into more than 20,000 video clips so they can be easily integrated into the classroom. Educators can search for relevant clips by subject area, grade or keyword. All clips are free and can be instantly downloaded for use. The only hardware that teachers need is a computer and a projector in the classroom. For convenience, the video clips can be paused, rewound or forwarded, as dictated by student or teacher. With *Video-on-Demand*, a teacher can download only the most relevant part of a video to help illustrate a particular point in the classroom. Many of the videos are accompanied by lesson plans, which assist teachers with incorporating Thirteen/WNET New York videos into their curriculum, as well as with satisfying New York State and Federal education standards. Teachers can also utilize the station's on-air broadcasting of *Instructional Television* (ITV) programs, which cover a wide array of subjects, such as math or English as a Second Language (ESL). These shows are aired early in the morning so that teachers can set their VCRs to record just what they are interested in. The programs can then be used in the classroom when needed.

*PROFESSIONAL DEVELOPMENT* – The National Teacher Training Institute (NTTI) is one of the largest professional development projects in the nation. Its goal is to integrate technology into K – 12 classrooms by training teachers to create exciting and interactive lesson plans approved by current educational standards. Teachers participate in workshops that are taught by trained and experienced teachers. There is year-round support offered through the website, which provides over 1,000 lesson plans, online workshops and strategies for educators. In the 2003 – 2004 school year, more than 15

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public television stations will partner with Thirteen/WNET New York to offer workshops and ongoing training to more than 5,000 teachers.

*PARENT AND STUDENT SERVICES* – Thirteen/WNET New York offers parents of very young children workshops, interactive activities, activity sheets and media literacy information to complement educational programming and to help them use TV as a more interactive learning tool for their children.

*FUNDING* – Thirteen/WNET New York’s content services are produced free to all users, and its *Educational Resource Center* offers supporting professional development services at a nominal fee. Foundations, corporate underwriting, membership fees and the New York State Education Department support the organization’s work.

### III. PROGRAM RESULTS:

Thirteen/WNET New York is able to track the number of video clips that are streamed/downloaded from the Video-on-Demand site for use in classrooms. Since the Video-on-Demand site launched in September 2002, over 1.3 million clips have been viewed throughout New York State, with over 200,000 views within the New York metro area. In addition, students are using the online educational games and activities more than ever. Thirteen/WNET New York is tracking usage of its online content by counting the number of viewers watching a program and the number of logins on their website.

## Appendix A: The Profiles Contact List

### *Report Authors and Editors*

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Web: [www.council.nyc.ny.us](http://www.council.nyc.ny.us)

#### **Gale A. Brewer**

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Chair, Committee on Technology in Government  
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Web: [www.council.nyc.ny.us](http://www.council.nyc.ny.us)

### *Profiled Organizations*

#### **The Beacon School**

227-243 W. 61<sup>st</sup> Street  
New York, NY 10023  
Tel: (212) 245-2807  
Fax: (212) 245-2179  
[www.beaconschool.org](http://www.beaconschool.org)  
Contact: Chris Lehmann, Teacher

#### **Center for Children and Technology**

96 Morton Street, 7<sup>th</sup> Floor  
New York, NY 10014  
Tel: (212) 807-2409  
Fax: (212) 633-8804

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[www.edc.org/CCT](http://www.edc.org/CCT)

Contact: Margaret Honey, Vice President, Educational Development Center

### **Computers for Youth**

505 Eighth Avenue, Suite 2402

New York, NY 10018

Tel: (212) 563-7300

Fax: (212) 563-1215

[www.cfy.org](http://www.cfy.org)

Contact: Mike Everett-Lane, Director of Development and Planning

### **The Michael J. Petrides School**

715 Ocean Terrace

Staten Island, NY 10301

Tel: (718) 815-0186

[www.petrides.com](http://www.petrides.com)

Contact: Mike Davino, Former Principal / Superintendent, Springfield (NJ) Public School District (Tel: 973-376-1025)

### **The Mott Hall School**

71 Convent Avenue

New York, NY 10027

Tel: (212) 927-9466

Fax: (212) 491-3451

[www.motthall.org](http://www.motthall.org)

Contact: Mark Briller, Professional Staff Developer

### **MOUSE**

116 W. Houston Street, 3rd floor

New York, NY 10012

Tel: (212) 379-6348

Fax: (212) 379-1274

[www.mouse.org](http://www.mouse.org)

Contact: Calvin Hastings, Senior Director of Programs

### **The National Academy Foundation**

39 Broadway, Suite 1640

New York, NY 10006

## Part II: The Profiles – Profiles of Innovators and Leaders Who Make a Difference

Tel: (212) 635–2400

[www.naf.org](http://www.naf.org)

Contact: Gregg B. Betheil, Vice President, Academy Programs

### **NY Talks (Council of School Supervisors & Administrators)**

16 Court Street

Brooklyn, NY 11241

Tel: (718) 852–3000

[www.nytalks.org](http://www.nytalks.org)

Contact: Michael Schlar, Director, NY Talks

### **One Economy Corporation**

95 Wall Street, 10th Floor

New York, NY 10005

Tel: (212) 493–3051

Fax: (212) 493–3328

[www.one-economy.com](http://www.one-economy.com)

Contact: Mark Levine, Vice President

### **PS 811Q**

61–25 Marathon Parkway

Little Neck, NY

Tel: (718) 224–8060

<http://schools.nycenet.edu/d75/p811q/>

Contact: Janet Healy, Assistant Principal

### **The School at Columbia University / The Center for Integrated Learning and Teaching**

556 W. 110th Street

New York, NY 10025

Tel: (212) 851–4286

[www.theschool.columbia.edu](http://www.theschool.columbia.edu)

Contact: Luyen Chou, Associate Head / Executive Director

### **Teaching Matters**

475 Riverside Drive, Suite 1270

New York, NY 10115

Tel: (212) 870–3505

[www.teachingmatters.org](http://www.teachingmatters.org)

Contact: Lynette Guastaferro, Executive Director

### **ThinkQuest NYC**

116 W. Houston Street, 2nd floor

New York, NY 10012

Tel: (646) 773-1041

[www.tqnyc.org](http://www.tqnyc.org)

Contact: Lisa Ernst, Executive Director, ThinkQuest, Inc.

### **Tutor.com**

40 Fulton Street, 9th Floor

New York, NY 10038

Tel: (212) 528-3101

[www.tutor.com](http://www.tutor.com)

Contact: George Cigale, CEO

### **Vision Education, Inc.**

250 W. 57th Street

New York, NY 10107

Tel: (212) 245-0444

[www.visioneducation.com](http://www.visioneducation.com)

Contact: Laura Allen, President

### **Wireless Generation**

11 E. 26th Street, 14th floor

New York, NY 10010

Tel: (212) 213-8177 x2004

[www.wirelessgeneration.com](http://www.wirelessgeneration.com)

Contact: Gregg Gunn, President

### **Thirteen / WNET New York**

450 W. 33rd Street

New York, NY 10001

Tel: (212) 560-8841

[www.THIRTEEN.org](http://www.THIRTEEN.org)

Contact: Jon Rubin, Director, State and Local Education Services