Miller Elementary School – Final Report

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Part One: The Situation

Organization

The mission of the school is to educate children in grades K – 5 in academic subjects, technology, and in Afrocentric heritage. The school is located at 61 Reed Street, in Pittsburgh, 5 minutes from downtown. The school has 36 employees and 263 students. The district implemented a three-tier phase technology plan beginning in 1997. Miller Elementary School completed phase three in October 2000. As a result, they have relatively up-to-date computers and other technologies.

Facilities

The structure was built in 1938, so it is over 60 years old, and it is a three-floor building. There is one main office used primarily for administrative purposes, 3 small offices within the main office, 1 copier room, 2 computer labs, 28 classrooms, 1 auditorium, and 1 cafeteria. There is a heating/cooling problem throughout the school as there is no air conditioner and only some rooms have ceiling fans.

Most of the computers and technological equipment are kept in the two computer labs, however, the administrative office and each classroom are also equipped with some computers. There are a total of 29 Pentium III computers w/Windows NT 4.0 acquired in phase three of the district technology plan. The new computer lab is configured with 25 of these computers and the remaining four are located in the administrative office. In addition, the school is equipped with 43 Dell computers w/Windows NT 4.0, acquired in 1997, and 81 Pentium computers running the Jostens software program, acquired in 1995. The old computer lab has 16 Pentium and 15 Dell computers. Each classroom has one Dell computer which is used by the teacher, and two to three Pentium computers. See the *Technical Environment* section for a more complete description of the technical facilities at Miller Elementary School.

Program

The school day runs from 7:45am to 3:45pm, Monday to Friday. The faculty is required to work 8:00am to 4:00pm, Monday to Friday. The school exposes children to technology in stages according to grade level: children in kindergarten are introduced to the keyboard; students in 1st grade learn the basics of word processing; 2nd grade students get more practice with word processing and learn how to retrieve information through the Internet; students in 3rd through 5th grades learn how to export/import pictures; and, students in 4th and 5th grades learn how to use PowerPoint.

There are also various programs in effect for faculty and parent development offered by the school and the district, such as how to use software, the web, and email. A technology team was constructed over the summer of 2000 to learn InteGrade (a software package for keeping track of students' grades) among various other technologies, and trained the faculty in house. Training sessions are often held either in the mornings or after school for the staff. The In-Service day is used for technology training. A parent technology enhancement class is held in sessions per grade level throughout the year, on a first-come first-serve basis.

Staff
The principal is responsible for smooth operation of the school, staying within budget, and evaluating staff, among other tasks. The teachers instruct the students at various grade levels. The staff must fulfill the administrative duties of the school, such as answering the telephone, entering student data, and making orders for supplies. The in house technology leader is a teacher who has been with Miller Elementary School for 6 years. She has been a technology leader for 5 years. She leads the technology team that was formed in the summer of 2000. She learns how to use new software offered by the district, and teaches her co-workers. The principal has been at the school for 9 years. She uses the Internet and email about once a day. The teachers use the computer to enter student grades into InteGrade and use the Internet to research classroom topics. Most members of the faculty have been at the school for several years, although there are a few newcomers who have been there for a year or less.

Technology Environment
There are a total of 29 Pentium III computers throughout the school w/Windows NT 4.0, 192 MB memory, 667 MHz, and 24 GB HD. Some programs on these computers include MS Office Suite, InteGrade, Encarta, and DOS programs (Stars Plus) provided by district. The school acquired the computers in October 2000 from the district and through grants. There are four PCs in the main office and 25 PCs in the new computer lab. Also, there is one Smart Board and two HP LaserJet 4050TN printers in the new computer lab. All PCs are configured with Ethernet cable.

There are a total of 81 Pentium computers w/Windows NT 4.0 and 43 Dell computers w/Windows NT 4.0 in the school. The old computer lab has 16 Pentium computers w/Windows NT 4.0 that run a program called Jostens, and were acquired in 1995. Also in the old computer lab are another 15 Dell computers w/Windows NT 4.0 that were acquired in 1997. Some programs on these computers include MS Office Suite, Encarta, and math software. All the Dells are configured with an Ethernet connection. Also, there is one HP DeskJet 820Cse printer and a scanner in the old computer lab.

In addition, each classroom has one printer, one Dell computer, primarily for teacher use, and two to three Jostens computers, shared by the students. All faculty members have an email account, and have MS Outlook on their PCs.

The district runs a DOS mainframe that has been in use for over 9 years (the server that holds all the student information for all the schools in the district). There was no formal training or support for the new PCs, when they arrived in October 2000. The faculty is satisfied with both the quantity and quality of computers they have since the completion of phase III.

Technology Management
The computers and network were all set up and configured by the Department of Education of Pittsburgh Public Schools. There is a computing help desk that can be reached during office hours in case of a technical problem. There is no network administrator or professional technical employee in house. There has not been an urgent need or any serious problem that needed the attention of the help desk since the arrival of the new computers (brought to the school in October 2000).

The in house teacher become technology leader has the most experience with technology. She explores and experiments with new software, equipment, and other technologies and explains what she learns to the rest of the faculty. The technology leader is self-taught. While she has had no formal technology education or training, she is highly motivated and interested in mastering technology.

Part Two: Consulting Partnership Focus

1. Principal needed a way to disperse information efficiently and conveniently.
Miller Elementary School needed to establish a medium where students and parents can find information about the school, curriculum, classes, etc., conveniently and efficiently.

Approach
We began to setup a web site to publish information. Many parents already have access to the Internet, whether in their homes, local libraries, etc., and have expressed interest in attaining school information from the web.

To accomplish this task, we held 3 training sessions (2:30 pm to 4:30 pm). Mrs. Moriarty and a few teachers met in the new computer lab and learned Microsoft Publisher together. In the first session, we stepped through an online tutorial for Microsoft Publisher, downloaded from the Microsoft Educational Website. In the subsequent sessions, the group worked on their own web pages while the consultant coached and answered questions. The group worked in pairs and helped each other, learning to answer their own questions.

The web site includes information, such as:
- The school's curriculum.
- After school programs.
- General information about the school.
- Specific information for every class, including current homework assignments, a classroom calendar, etc.

Expected results:
- Decrease fears about technology.
- Increase awareness and expand their knowledge base in Internet technology.
- Learn how to use Microsoft Publisher, and build confidence so that they will be better equipped to attack the process of learning other web building/software programs.
- Create and update simple web pages with customized graphics and fonts, hyperlinks, and a variety of layouts.
- Share ideas and help each other in an ongoing way, even after the training has ended.

We aspired that this approach would help the faculty create a web-based oriented community at Miller Elementary School, a resource for the teachers as they explore a new technology.

Outcomes
- Principal Moriarty made practice web pages with a variety of wizard template settings, customized the graphics with her own choices from clipart and images from the web, changed font styles, and tried a variety of layouts.
- She demonstrated confidence and creativity as she explored MS Publisher and experimented with its capabilities.
- On her own, Mrs. Moriarty created her own website which contained information about the school's mission, an image that she took off the web, a picture of herself that she retrieved from a digital picture disk, hyperlinks to other pages within her website, and hyperlinks to URLs on the Internet. This website that she made provides concrete evidence of increased capacity.
- The teachers created practice websites and demonstrated imagination in their pages.
- The teachers created websites about their classrooms on their own, demonstrating many of the same abilities as Mrs. Moriarty, which also provides concrete evidence of increased capacity.

The progress made will be sustained primarily through maintaining the website and practicing web building skills. The only risk is losing the capacity gained, which may happen if they do not maintain and continually improve their knowledge and skill. Both Mrs. Moriarty and the faculty agree that practice is necessary to avoid this risk and retain the newly learned skills.

Recommendation
This web building team needs to actually implement a website for the school, including web pages for every class, mission, and the school's curriculum, by expanding their web building skills.

To implement this recommendation
- Follow online tutorials to add new functions and learn new skills.
- Read about current trends in web development.
- Look at other websites online for new ideas.
- Identify resources to help troubleshoot problems.
- Ask School District about locations where they can host the website.
- Ask the School District to add a link to their web site from the district's website
- Integrate this knowledge into the curriculum and pass it on to the students. For example, they could teach students how to build web pages where projects or homework assignments can be published and be made accessible to parents, relatives, and other students.

Resources
- http://www.microsoft.com/education/tutorial/default.asp: This is Microsoft's Educational Tutorial website. It has many free tutorials on Microsoft products including Publisher and FrontPage, and information about how to integrate technology into education for teachers and administrators.

  Mrs. Moriarty should aim to explore the web building tutorials available at Microsoft's Educational Website, such that she covers one tutorial every month. One month should allow her enough time to run through the tutorial several times and practice the skills taught in it on her own. It is important that she practices the concepts covered in the tutorial without the aid of the tutorial, because this will reinforce the skills taught in it and will help her build confidence in using those skills. I suggest that she first reinforces the concepts she learned from the Publisher tutorial. She should make sure she fulfills each of the tutorial's learning objectives. Specifically, she should:
  - Understand the mechanics involved in planning and developing both a personal and a school website.
  - Use the Web Site Wizard to develop different types of pages and customize them to meet her individual needs.
  - Be able to insert Clip Art and other graphics into her web pages.
  - Be able to modify text elements of the Wizard generated web pages.
  - Be able to insert hyperlinks to the Internet and to other pages within her website
  - Be able to preview her website

  Once she feels comfortable with the techniques introduced in the Publisher tutorial, she can delve deeper into web building by exploring the FrontPage tutorial. The FrontPage application is more geared towards web building than Publisher since its features are tailored to websites; hence it is a more useful tool in creating web pages.

- http://wsabstract.com/howto/: This website contains tutorials on the latest technologies in web development. Currently, some topics covered include how to add a search engine to your website and how to create image maps. This website would be an ideal resource for acquiring information on new

technologies once Mrs. Moriarty and the teachers become more familiar with web development and Internet terminology.

> Mrs. Moriarty should learn the tutorials in this website once she has mastered concepts in using Microsoft Publisher and FrontPage. The tutorials available at this site will teach her how to add increased functionality to her website, making it more dynamic, interesting, and interactive.

♣ http://www.matisse.net/files/glossary.html: This website is a glossary of Internet terminology, an invaluable resource for a beginner in web development.

> Mrs. Moriarty should use this website as a resource whenever she encounters Internet terminology that she is unfamiliar with.

♣ http://www.expertson.com/: This website provides information about new product development, software reviews, website optimization, and resources to join newsgroups, among other topics. It can be helpful to find out about current technologies and software packages.

> Mrs. Moriarty should consider joining one of the newsgroups available at this website, so that she can become involved in a community of other web builders where ideas and questions can be addressed. She should also visit the *Website Optimization* page of this website often, since it publishes information about current trends in web development and the hottest tools in the industry. She should try to visit this page at least once every two weeks, since the feature articles (all are related to web development) change often, and the more she is exposed to the better versed she will become in Internet technology.

♣ http://www.webweek.com/: This website is an online publication about current news in the web and about Internet technologies. It contains articles about new products and their reviews, trends in the Internet, how the Internet affects the economy, and other Internet related issues. It also has information about conferences nationwide pertaining to Internet technology, extensive resources, and ratings of the most frequently websites, among other topics.

> Mrs. Moriarty should visit this website and consider subscribing to the magazine offered at this website since it will help her become better versed and more aware of issues in the Internet technologies. As she becomes more knowledgeable about web building and the Internet, she will find it useful to understand how the Internet fits in the bigger picture, i.e. how it influences the market and the world. Learning about such issues will help her create better websites since she will have a better understanding of what the Internet is all about.

2. Learn to use the available software.

Mrs. Moriarty realized the importance of becoming proficient in software programs and using technology, as she realized that they can automate many of her daily tasks, allowing her to get more done every day in a more efficient and organized manner. She also understood that as the principal of the school, she should have a better understanding of technology and how it can be integrated into the school. Mrs. Moriarty needed to attain a more thorough view of how to use various software packages and other technological tools, so that she will be better equipped to assess the teachers from a technological standpoint, know where they need more training, and can contribute ideas of how to make the classroom more interesting using computers (i.e. use Microsoft Excel in math class to show students how to analyze numeric data).

Approach

We explored several software packages together, and continually reinforced concepts learned in previous meetings. We stepped through tutorials for Microsoft Access and Microsoft Publisher available at Microsoft's Educational Website, as well as created our own practice databases and web pages using concepts learned from the tutorials. We also experimented with features of Microsoft Outlook, such as attachments and items already sent.

Expected results:
- Decrease fears about technology.
- Increase awareness and expand their knowledge base in technology.
- Learn how to use Microsoft Publisher, Access, and Outlook, and build confidence so that she will be better equipped to attack the process of learning other software programs.
- Create simple web pages with customized graphics and fonts, hyperlinks, and a variety of layouts using Microsoft Publisher.
- Create databases to organize student information using Microsoft Access.
- Learn functionality of Microsoft Outlook (i.e. attachments).

Outcomes
- Mrs. Moriarty displays confidence when she explores a software package that is unfamiliar to her, where as she used to restrict her exploration to self-imposed limitations and was afraid of breaking the program if she pressed the wrong button.

  Since many of the software programs she uses have similar interfaces, i.e. menu bar, toolbars, etc., she applies similar techniques when she explores different packages. For example, she knows that the save and close functions are in the File tab of the menu bar. Likewise, she knows that options to change the layout of the screen can be found under the View tab in the menu bar. If she makes a mistake in typing a document in Word or in editing a page in Publisher, she knows that she can use the Undo function in the Edit tab of the menu bar.
- She uses Outlook to open and send email attachments.
- She keeps track of messages already sent using the *Sent Items* folder of MS Outlook.
- She used Excel to create the annual budget report and is now able to estimate the financial situation of the school easily.
- She created a database by herself to track information on classes, student information, departments, etc. She is able to add, change and delete records from the database, as well as use queries to extract data meeting specific requirements.
- She created practice web pages with hyperlinks, customized graphics and font styles, and a variety of layouts.

In order to sustain increased capacity, it is important for Mrs. Moriarty to practice the skills she acquired. It is unlikely that she will not practice and thus forget these skills, because she is very motivated to practice.

Recommendation

If Miller Elementary School wants to give its students the best educational opportunity, the faculty must learn how to use technology first, and then must integrate it into learning activities. As the principal, if Mrs. Moriarty stays ahead of the game, she will have a better understanding of the capabilities of the technology curriculum at the school. As such, she needs to know what opportunities technology can provide, and she needs to attain a more solid and broader understanding of what technology offers.

In order to accomplish this, she must become more comfortable with various software packages and other technological tools. She can then better assess the teachers from a technical standpoint, and will better know where the faculty needs training. By reflecting on the steps she took to become more knowledgeable in technology, she will be better equipped to help the teachers learn it, since she can extrapolate from her own experiences. Furthermore, with a more complete understanding of the capabilities of technology, Mrs. Moriarty can better identify educational opportunities that will help teachers. For example, using Microsoft Excel in math classes, publishing class information online, etc. Once Mrs. Moriarty brings the teachers up to speed, together they can brainstorm new ways of integrating technology into the curriculum, and the students will reap the benefits. In order to achieve this, Mrs. Moriarty must further expand her abilities in using various software packages and her knowledge of technology in general.

To implement this recommendation
- Squeeze the task of learning a software package into the daily schedule, so that a new product is learned every month.
- Visit Microsoft's Educational website frequently, and practice the tutorials available there.
- Find tutorials other than Microsoft's to expand your knowledge and skills.

Resources
- http://www.microsoft.com/education/tutorial/: This is Microsoft's Educational Tutorial website. It has many useful links to Microsoft application tutorials and information about how to integrate technology into education for teachers and administrators.

  Mrs. Moriarty should first use the Office 97 tutorial, which gives an overview of how to
  - Merge files and create newsletters, among other topics, in Word 97,
  - Create grade books and make graphs to analyze student progress in Excel 97,
  - Create a database to store student information in Access 97,
  - Create an impressive presentation with PowerPoint 97.

  Once she feels comfortable with the overview presented in the Office 97 tutorial, she can delve deeper into one these software packages and acquire a more thorough understanding, or can explore another software package not covered in the Office 97 tutorial. For example, if she wants to learn more about PowerPoint so that she can give very interesting and dynamic presentations, she can step through the PowerPoint 97 tutorial.

- http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html: This website provides a tutorial for how to find information on the web. Its objectives are:
  - Provide a current, up-to-date remote and local learning resource for anyone interested in finding information on the World Wide Web.
  - Provide a platform for beginners to the Internet, the World Wide Web, and the Netscape browser.
  - Recommend and explain effective, state-of-the-art search strategies applicable to any research interest.

The tutorial presented at this website is another technological tool that Mrs. Moriarty should learn, since the Internet is a tremendous resource of any kind of information and knowledge of how to find such information is invaluable. For example, Mrs. Moriarty can use the techniques covered in this website to find out more information about Martin Luther King Jr., the recipe for lemon chicken, or even to find a tutorial on Microsoft Access. The possibilities of what she can find are endless, which is why I highly recommend that my community partner explore this tutorial.

- http://www.compusmart.ab.ca/alummis/: This website has a collection of computer tutorials for teachers, made by a teacher. It also has a link to the classroom website of the teacher who made the page.

  Mrs. Moriarty can use the various tutorials on this page and can get ideas for Miller Elementary School's classroom websites (which she can share with the teachers).

- http://www.find.com.au/tutorials/default.asp: This website has an extensive collection of tutorials, over 300 categories and over 3000 links, from Computer Hardware and Software, to Education, to Adobe, to Gardening. If you need to find a tutorial, this would be the place to look. Also, if you join the *Find Network*, you can request a tutorial and they will try to find one for you, and membership is free.

  Mrs. Moriarty can use this website to find a tutorial for Microsoft as well as non-Microsoft products. For example, if she wants to learn how to edit pictures using Adobe Photoshop, there is a Photoshop crash course tutorial as well as more tutorials for more specific topics, including painting with light and cool text effects. She can use these tutorials to create exciting images for her school website.

III. Additional Recommendations

Follow current trends in technology and education.

Furthermore, as technologies change rapidly in this day and age, Mrs. Moriarty should also visit current technology websites or subscribe to technology magazines to remain versed in current happenings in computers and software. Also, by reading about cutting edge technology, she will always be able to find something new to learn. As a result of keeping up with current trends in technology, Mrs. Moriarty will be able to make more informed decisions about the environment at Miller Elementary, in terms of hardware and software, and can better prepare students with technology background.

To implement this recommendation

- Subscribe to Technology Horizons in Education (T.H.E.) Magazine, which can be mailed to her house for free and is also available online.
- Read the monthly issue of this magazine to become well versed in current issues and news in the technological world.

Resources

- http://www.thejournal.com/: This website is an online monthly publication about technology in K-12 and higher education. It can be used to find out current news in technology-based education for

administrators and teachers. It contains articles pertaining to the latest technology news, products, software/courseware, e-learning (learning on the Internet), schedule of conferences, in addition to the usual feature articles and editorials.

2. Teach teachers about technology

In order to provide the best educational opportunity to its students, the faculty at Miller Elementary School must also become well versed in technology. After Mrs. Moriarty is more comfortable with technology herself, she should reflect on the process it took for her to learn about it, and should extrapolate from her own experiences. Then, she can implement a program similar to the process she took that will aim to teach the faculty about technology. She should think about things that delayed her from learning before our consultant partnership began, notably fear, time commitment, frustrations, and incentive, and how our partnership overcame those obstacles. For example, since I worked closely with Mrs. Moriarty on a weekly basis, she had to commit the time to furthering her technological growth. Also, since I became a resource for her when she did not know how to complete a task using a software program, she became less frustrated by it. Similarly, since she consistently worked with software packages that she was once foreign to, she began to build confidence in using them and the fear slowly diminished. Incentive to learn about technology stemmed from her realization of its increasing importance in everyday life, not only in her job and in job security, but also in giving the students at Miller Elementary School the best educational opportunities.

To implement this recommendation
- Hire a student intern, i.e. from a nearby college/high school, who can work closely with the faculty, much like the consultant relationship we had.
- Specify what software programs and tools the faculty should become skilled at, since you will be the most knowledgeable and know what would be more helpful for the school's curriculum.
- Make faculty aware of professional development training hours that are required by law of Pennsylvania schoolteachers.
- Offer credit towards professional development training hours for time spent learning about technology.

Consider offering additional incentives, such as small monetary rewards (i.e. gift certificates) or paid time off.

Some students may volunteer to intern at Miller Elementary School for a semester since such an experience is a resume builder. Then, the act of employing a student intern would cost little to no money at all. Furthermore, with an intern that consistently works with the faculty at the school, the teachers and staff will have to dedicate time to furthering their technological growth in a way that builds confidence and minimizes frustrations. In addition, the incentives will motivate the faculty to learn about technology.

Resources
- http://www.psrn.org/teacher.html: This website contains Pennsylvania laws regarding teachers and education. Mrs. Moriarty can use this website to find out laws regarding professional development hours required of teachers, notably House Bill 8, Senate Bill 182, and Senate Bill 305.
- The same resources used in *Learn to use the available software* can also be used here.

3. Integrate technology into the school's curriculum

Lastly, I suggest that Mrs. Moriarty integrates learning about new software and technologies into the school's curriculum to provide the best educational opportunities to the students.

To implement this recommendation

- ❿ Brainstorm with faculty about ideas of using technology in the classrooms. Some possibilities include using Excel in math class, using PowerPoint presentations when lecturing in class, making classroom information available on the web and publishing student work on the web.
- ❿ Ask faculty to implement an idea that joins technology and the classroom.
- ❿ Create a website of "Best Practices" where ideas of integrating technology into the classroom and the teachers who implement them are commended. Feature a different idea and teacher every month.
- ❿ Offer rewards (small gift certificate, etc.) to teachers who are featured on the "Best Practices" website.
- ❿ Tell School District about "Best Practices" website to attain praise from district and to spread an idea of how to engender incentive and implement a program that commends the integration of technology and education.
- ❿ Suggest that teachers include rewards from "Best Practices" website on their resumes. Other schools will be impressed with their expertise in technology and their motivation.

Resources:

- http://www.edutechnet.com/links.htm and http://web66.coled.umn.edu/: These are both very helpful websites that provide resources/links for almost any topic related to educational technology, such as networking solutions, technology related to teachers, information about computer manufactures, training, etc.
- Mrs. Moriarty can use the resources under the *Especially for Teachers* and *Lesson Plan Sources* category from the first link to come up with some ideas of how to integrate technology into the classroom (i.e. lesson plans).
- http://cnets.iste.org/: This website provides information about initiatives to integrate technology into education. It also has resources on what administrators should know about and be able to do with technology and what leadership qualities facilitate use of technology in schools to improve student learning.
- http://school.discovery.com/schrockguide/ and http://www.lessonplanspage.com/: These websites contain lesson plans ranging from educational technology, to mathematics, to art, to agriculture. Mrs. Moriarty can use these websites to find ideas for how involve students with computers in the classroom.

The same resources listed in *Principal needed a way to disperse information efficiently and conveniently* can be used to build the "Best Practices" website.