Technology in Education
Virginia Society for VSTE

Journal

Virginia Society for Technology in Education •

Spring 2002
Vol. 16, No. 3

Contents

Virginia Society for Technology in Education
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Editor's Comments:

A Special Message

For the past few years I have really enjoyed being a part of the VSTE Editorial Board, first as the Research Editor and then as the Managing Editor. The experience has given me various opportunities to interact with people all over Virginia as well as throughout the world. People far and wide read the VSTE Journal and write to me from time to time for more information or to say that the journal is a wonderful resource.

I have also been able to tie my interest in teacher research with my work on the journal. I have long said that we must be able to address the hard questions being asked about what benefits do we receive when investing in technology for the classroom. Since 1998 we have included in the VSTE Journal articles from educators who have systematically investigated how they use technology in the course of their teaching and what they discover as the effects of technology use that contribute to student achievement and/or attitudes about learning. I hope that continues because knowing the effects helps us become better educators.

It is because of my intense interest in teacher research that I have requested that I not be re-appointed to the position of Managing Editor of the VSTE Journal next year. My fulltime technology resource teacher position at my school and fairly new role as co-leader of the Fairfax County Teacher Research Network has kept me more than just "busy." The Teacher Research Network is growing and with its growth, more demands are being placed on my time.

I will miss working directly with the Editorial Board. However, I hope to still make contributions to the journal from time to time. Thank you for the opportunity to be a part of this wonderful technology society. I have enjoyed your friendship and professional fellowship.

Respectfully,

Diane D. Painter, Ph.D.
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A Look at Girls' Attitudes Toward Math, Science, and Technology. Are We Really Making a Difference?

by Laura Reasoner Jones

In April, 2002, I presented the results of my seven-year action research project at the FCPS Teacher-Research Conference. But, instead of rounding off a successful project and tying up the loose ends, I am filled with new concerns and questions. Are we ever going to change girls' attitudes toward these subjects? Are we ever going to make a difference? I wonder.

In 1995, at the open house for the new science/technology magnet school where my ten-year old daughter had been invited to attend, we joined other parents and students for an exciting two-hour session observing and participating in computer simulations, science demonstrations and language arts projects. Afterward, my excitement about the coming school year was dampened by the realization that every time Julie went to try one of the math/science/technology activities, she had been pushed out of the way by the boys, or had not been called on by the group leader. She had not been willing to try the new activities, and she, too, was aware of her reluctance. Back in the car, she said, "Math is hard, Mom." I felt like I was talking to the recalled Math Class Barbie doll.

I knew I had to take action. I did extensive research on girls' attitudes toward math and science. I brought the Legos out of the basement, and I stopped saying I was bad in math. I also started an after-school club for fifth and sixth grade girls at my daughter's old elementary school. We had a blast. We built candy bridges, made Moebius strips, made our own paint, and designed mazes and microwave towers. We ignored the SOL's. This was the start of my research project.

One of the major findings of the educational research at that point in time was that girls tended to self-select out of the more difficult math and science classes in junior high and high school, thereby limiting their options in college and careers. My goal for my GEMS (Girls Excelling in Math and Science) club was to show my club members that math and science, and later, technology, was so interesting and fun that these subjects were worth pursing in high school classes and careers.

In 1997, when I did my first research study of the group, I found that in the short run, a year after these girls had completed the club activities, three groups of stakeholders saw changes.

Technology in Education
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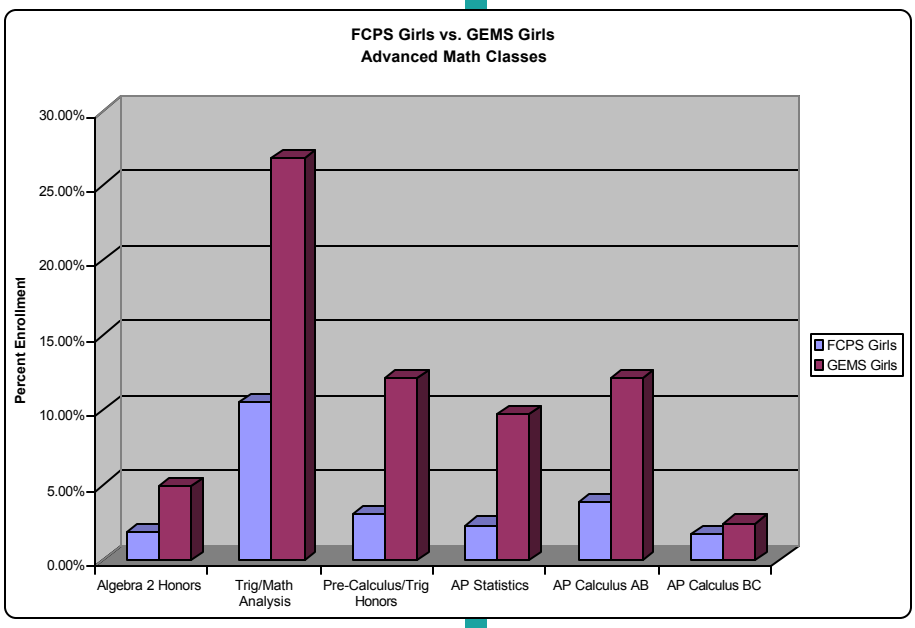
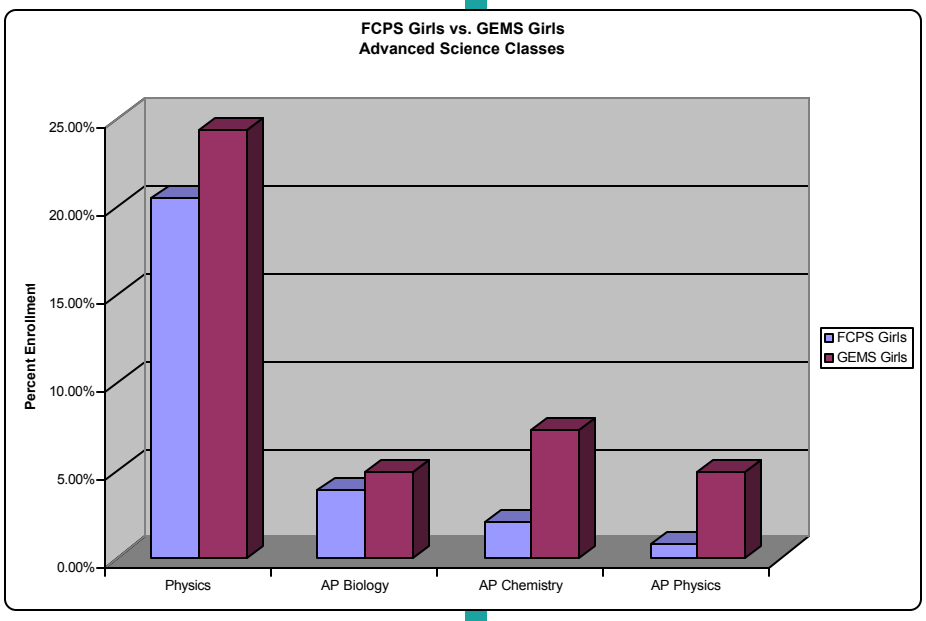
www.vste.org

Girls' Attitudes, continued

The girls, who were now in seventh and eighth grades, felt that math and science were easier for them than they had previously thought. They also saw themselves as heading toward careers in these fields. One of the eighth grade girls excitedly described her work in science that year creating Bohr models of elements in the periodic table with computer graphics programs. Another girl said that Algebra had been hard for her in the beginning because it was so abstract, but that she was doing better. She said, "Thinking in logic is hard." Yet another girl said that her biggest difficulty in science was in drawing conclusions after the experiment was completed.





I asked them if participating in GEMS made math or science any different – any harder or easier. Each girl said that these subjects were easier. One girl said, "Science has been an adventure." Another said, "GEMS enriched my sixth grade." A third girl said that she was more equipped to attack strategy and logic problems.

The parents, who had only provided transportation and snacks for the club, saw more independence and confidence in their daughters. One mother said her daughter was "always late leaving the building" and "always had a good time." Another mother remembered that her daughter was "thrilled" when she was invited to join GEMS by her teacher. One parent reported the pride in her daughter's voice when she showed her mother the structure she had designed and said, "We built that." Another mother stated that GEMS engendered a contagious excitement that "math was cool." The girls were excited about the activities and enjoyed being with "just girls."

One parent reported that the group identification "We are GEMS members" made a positive difference. Her daughter had made an active choice to join, thereby making a statement about herself: "I choose to spend time on math and science."

But they also indicated concerns about the future, expressing anxiety about the opportunities available to girls. Several parents expressed anxiety about financial stability for their children. They

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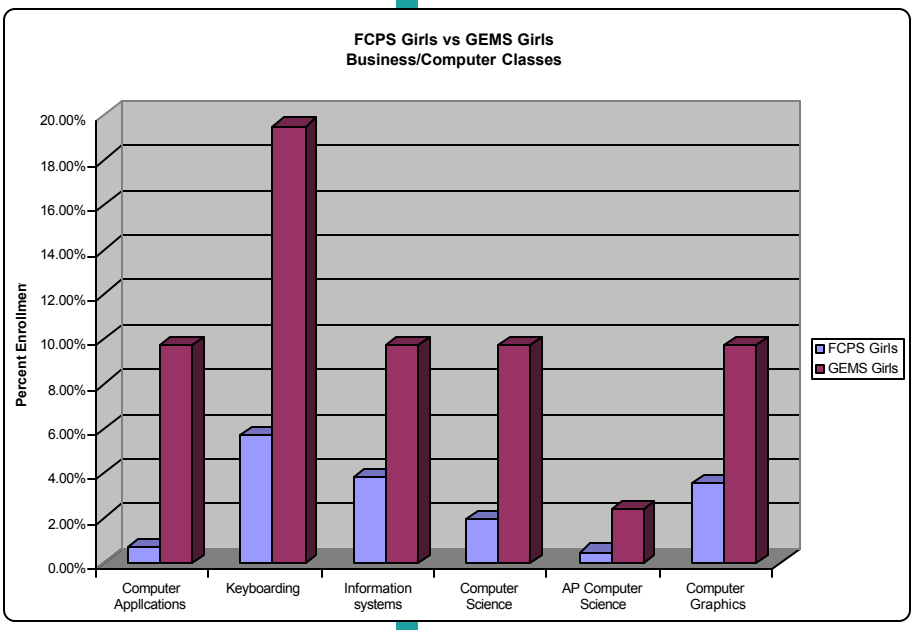
Girls' Attitudes, continued

were concerned that even with a good degree, the girls wouldn't be paid what they're worth. One mother (with three girls) said, "It's much harder [to think about futures] than if we had had boys." She cited family members whose equally talented and qualified girls had experienced more difficulty than their brothers finding jobs in business.

Another mother said that girls have a tougher road. She was very concerned about how her daughter would reach her goals. She emphasized the need for mentors for these young women "to keep the spark going."



The elementary school teachers also saw more confidence in the GEMS girls, and mentioned the pride the girls took in the activities and products they were completing in the club meetings. Many girls shared their experiences in class or in animated discussions before school. Some of the boys became interested in the activities and asked to join the club.

The teachers indicated that they had seen more risk-taking by "borderline" girls. "A few have blossomed" was another comment. The fifth and sixth grade teachers also felt that the girls looked forward to Thursday afternoons. They indicated that some girls had developed more independence and that others were beginning to show respect for each other. The principal felt that GEMS had increased the comfort level of girls in math and science. She said that "anytime we can provide an opportunity to expand horizons, we should do it."

Each semester I tried to point out that math and science are made up of many different types of skills within the subjects. I tried to show them that they might intuitively grasp logic/strategy problems, but not have a clue, for example, how to visualize and build a structure that would support a can of Coke. This disparity in skills in school could result in a lower grade, but in GEMS, it meant that you should seek a partner who needs your skills and who has the skills you need. My goal was to help these girls realize and celebrate their potential.

In 2002, as the first group of GEMS girls prepared to leave high school, I contacted 41 of the original members who were juniors and seniors. I asked them about their course selections and their career plans. The findings were fascinating. I compared the enrollment of these girls to the enrollment of girls in FCPS and found that indeed, these GEMS girls had chosen a higher percentage and many more of the higher level math and science classes offered by FCPS. In addition, although this was not my original focus, I asked about their enrollment in technology classes and compared that to the girls in the county.

Girls' Attitudes, continued

My original purpose for starting GEMS was to see if a club could make a difference in attitudes toward math and science. The research at the time of implementation showed that girls were opting out of the harder math and science classes in high school. My plan was to see if I could keep them interested in math and science so that they would choose to take these harder classes, even if they did not choose these fields for careers. The research at the time also showed that girls earned more money after college if they had taken high level math and science classes-their opportunities were not as limited. I defined a higher level math or science class as one that was more advanced than that required for a standard diploma, or one that was tracked by the Fairfax County Office for Women Task Force on Girls and Technology.

But now I wonder. Yes, with no additional intervention, my GEMS girls took significantly more high-level math/science/technology classes than the average FCPS female student. But these girls still have no interest in math/science/technology careers, and they continue to say "I'm just not a math person," Computers get more confusing every day," and "Science is not my subject." Yes, they have taken the classes, so their options are more open than before. But have we done anything to change the perception of careers in math/science/technology?

I am the recipient of an AAUW Educational Foundation Grant, working this year to turn AAUW's research report "Tech-Savvy Girls" into a video and viewer's guide. These will be distributed free of charge to every FCPS school, every AAUW branch nationwide, and shown across the country via the Fairfax Network. The central purpose of this video is to put the concerns in front of the stakeholders: If we're on the "Information Highway" and the girls can't drive, our journey may not take us in the direction that benefits everyone. Without the female perspective and talent bank in the continued progression of IT, what will we lose? What perspective and new directions will be lost?

Think how cars have changed and have become more family-friendly since women became involved in the design process. Look at the changes to medical internships and residency programs since women became a critical mass in that field. Consider the impact the female perspective has had on the profession of architecture. These perspectives benefit everyone. Can we afford not to have that in Information Technology?

Girls in the AAUW report, in my club, and in the video focus group are all saying: "We can, but we don't want to." They see that they need the background knowledge, the advanced math/science/technology courses, but after years of subtle pressure, they make active choices not to choose those careers.

My GEMS club goes on. We have created 7 more clubs in this county with the help and support of the Fairfax County Office for Women. We explode things, create chemical reactions, grow crystals, and build robots with Society of Women Engineers student members. We provide role models and early success in non-threatening environments. What more can be done?

I challenge us all as teachers: to make the classes more girl-friendly, to encourage female enrollment, and to encourage discourse and cooperation, not competition.

Girls' Attitudes, continued

And I challenge us all as teachers, parents and community leaders:
start early with our girls, encourage and support risk-taking, avoid rescuing, allow sweat and dirt, and to praise and recognize the girls for their skills, ideas and successes, not for appearance, neat products, or quiet behavior.

Catch them young and put them in the driver's seat. Make that "Information Highway" a girl-friendly place and we will all reap the results.

About the Author

Laura Reasoner Jones is on loan from Fairfax County Public Schools as a Teacher in Residence at the National Board for Professional Teaching Standards. She is working on the Digital Edge Project, creating a digital library of video, text, and accompanying documentation showing accomplished teaching with technology. To reach her, e-mail ljones@nbpts.org.

Technology in Education
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Connect to Information @ Your Library

by Charlotte Bruce

A web page designed to organize instructional tools for teaching, learning, and research gives students and teachers access to information they need – all in one place – from any Internet-capable computer at school, at home, anywhere, anytime.

The School Library Media Specialists (SLMS) at McLean High School in McLean, Virginia, designed the library web page to include resources needed for instruction and research. The browsers on all library computers are set to open to the library page (http://www.fcps.edu/McLeanHS/library/libraryws/index.htm), subtly giving students a good place to begin their research. Information needed to access these resources are made available to students through articles in the Parent-Teacher Newsletter and handouts that are distributed to students when they visit the library with their classes. Related information is printed in student planners that all students receive at the beginning of each school year.

The web page is simple, but it works. Four sections of the web page used for instruction are:

- Assignments
- Online Subscription Services
- Search Engines
- How to Cite

Research Resource Worksheet

Student Name: Teacher:
Topic:

Book:
Author/Editor:
Title:
City/State/Publisher:
Copyright Date:
Call Number:
Notes:

Internet Site:
Author(s):
Title of Document:
Title of Main Page:
URL (address):
Date of Document:
Date of Access:
Notes:

Online Database:
Author/Editor(s):
Title of article:
Print publication:
Date of print publication:
Page nos.
Database company:
Access location
Date of Access:
URL:
Notes:

Assignments

The Assignments part of the web page, http://www.fcps.edu/McLeanHS/library/libraryws/Assignments/assign2.htm, contains SLMS-designed worksheets that teachers select or modify to use with their projects. The "McLean High School MLA Stylesheet" and "Works Cited Examples" sections, which are used across the curriculum, reside on this web page also. For example, the "Research Resource Worksheet" is a graphic organizer to be used for recording information about books, online

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Your Library, continued

subscription services and Internet sites that students find for their projects. One column of the "Research Resource Worksheet" requires students to list bibliographic information from resources they find in order to write complete citations. Another column on this worksheet is labeled "Notes" and is for recording information about each resource to remind students about what they found and how it "fits" their projects.

Another part of the Assignments web page contains curriculum-specific information listed by subject area and the title of the project. Pathfinders of book lists, Internet sites, and search tips for online subscription services are tailor-made to each research project. Depending on the purpose of the assignment, the book lists may or may not have call numbers, since teachers may want their students to learn to use the online circulation system to practice finding books on their topics.

Chart 1:

Famous Romans Project Resources

MHS Library Reference Books:

R016.92072 Ada	Notable Women in World History
R 080 Gre	Great Treasury of Western Thought
R 190 Gre	Great Thinkers of the Western World
R 291.0223 Rel	Religions on File
R 291 Wor	World Religions From Ancient History to the Present
R 355.7 Mac	A Roman Fort
R 391.009 Rae	The Historical Encyclopedia of Costumes
R 391.09 Les	Historic Costumes
R 391.09 Lis	Costume: An Illustrated Survey From Ancient Times to the 20th Century
R 394 Wal	Curiosities of Popular Customs
R 411 Ull	Ancient Writing and Its Influence
R 509 Sci	Science and Its Times
R 509.24 Gre	Great Scientific Achievements
R 641.309 Cam	The Cambridge World History of Food
R 700.9 Luc	Art and Civilization
R 703 Die	The Grove Dictionary of Art
R Gar	Art Through the Ages
R 709 Jan	The History of Art
R 720.9	A History of Architecture
R 737.4 Cri	The Coin Atlas: the World of Coinage From Its Origins to the Present Day
R 909 Ar	Datelines of World History
R 920 Alm	Almanac of Famous People
R 920 Enc	Encyclopedia of World Biography
R 920 Har	The 100: A Ranking of the MostInfluential Persons in History
R 920 Jac	Women Who Ruled
R 920 Who	Who Was Who in the Roman World
R 923 Exp	Explorers and Discoverers of the World
R 930 Anc	Ancient Civilizations
R 930 Cor	Rome and the Ancient World
R 930 His	The Ancient and Medieval World
R 930.02 Smi	Smithsonian Timelines of the Ancient World
R 930.0c Vis	The Visual Dictionary of AncientCivilization
R 937 Adx	Handbook to Life in Ancient Rome
R 937 Cox	Ancient Rome
R 937.02 Cor	Atlas of the Ancient World
R 937.06 Bun	Encyclopedia of the Roman Empire
R 938 Anc	Ancient Greece and Rome

Your Library, continued

Chart 1, continued

MHS Library Non-Fiction Books:

130 Nys	Secrets of the Alchemists
305.4 His	A History of Women
305.4094 And	A History of Their Own
305.4094 Wom	Women in the Classical World
365.0 Oxf	Oxford History of Prisons
391 Ba	The Common Man Through the Centuries
391.009 Ha	Figleafing Through History
391.09 Gor	What People Wore — A Visual History of Dress From Ancient Rome to 20th Century America
609 Ho	Technology in the Ancient World
609 Wil	Art and Technology: the Early Inventions
641.3 Ren	Food and Cooking in Roman Britain: History and Recipes
741.5 Ho	Editorial and Political Cartooning
780.9 Mus	Music in History
870 Lo	A Survey of Classical Roman Literature
880.09 Nor	The Norton Book of Classical Literature

Non-Fiction Shelves:
Look in the non-fiction section of the library between 937 and 937.6 for other books about Roman History for this project.

Online Catalog:
Go to http://libcat.fcps.edu and choose McLean in the pop down menu on the right side of the page. Type your person's name in the search bar and click on Subject, to find books with information about the person. Click on the **See More** button to find details about the books. Look for related topics on the right side of the screen or in additional subject headings at the bottom of each book description.

Online Subscription Services:
Grolier Online: http://go.grolier.com
In the left frame on the main page, choose:
History, World
Europe
Ancient and Medieval History
Roman Empire
You will find several choices that include people such as
Political Leaders
Historical Figures
Dictators
Military Leaders
Emperors

Internet Search Engine:
Vivisimo (http://www.vivisimo.com)
Keywords to try: Romans or Famous Romans

Online Subscription Services

Students move from finding books to searching online subscription services in order to discover the appropriate context of their topics and to glean additional keywords to use in other searches. Online subscription services are selected to meet the needs of the curriculum. Putting them on a web page with annotations gives students easy access and helps them decide at a glance which ones will be most useful to them for various research projects. These services contain authoritative resources that have gone through careful editing processes and are

Your Library, continued

organized, frequently updated, and often present multiple search capabilities. Vendors constantly change designs and access methods, which allows SLMS opportunities to refresh students' prior knowledge of these products or to show students different ways to search for information in these databases. Instruction for these subscription services includes:

- showing students the best way to access these services for their projects, i.e., basic or advanced keyword searches, or topic searches,
- finding additional keywords or subject headings in the article titles and text for further searching ideas,
- discussing the value of reliable, accurate, thorough, relevant, and authoritative information evaluated by humans who carefully connect resources to various topics,
- comparing online subscription services' resources with the rigorous editing process for books,
- showing teachers how to use these services in their subject areas, and,
- teaching students and teachers to learn how to manipulate online subscription services to take full advantage of features such as emailing articles home, tagging articles related by subject to eliminate irrelevant information, and how to view printable copies to eliminate web page decorations or graphics and save paper and ink.

Chart 2:

World Civilization II Biographical Research Paper

SIRS: http://sks.sirs.com

Quick Search: Type **John Calvin** into the search bar. How many relevant articles do you find?

Topic Browse

Click on tab at top of page called **Topic Browse.**
Click on **Philosophy & Religion** (Third column)
Click on **People**
Click on **Religious Thinkers** Examine results.

Which search, **Quick Search** or **Topic Search**, is the most useful for finding information about John Calvin?

Elibrary: http://www.elibrary.com/education

Type **John Calvin** into the search bar.
De-select "books."
Review list of returns.
Click on an article that has interesting information about John Calvin and email it to Susan.Sloan@fcps.edu

Grolier: http://www.go.grolier.com

Type: **Cervantes** into the search bar.
How many choices do you find for Cervantes? _____
What is the title of the best choice for general biographical information about Cervantes?

Literature Resource Center: http://galenet.gale.com

Do an Author Search for: **Victor Hugo**
Click on the tab labeled: **Literary Criticism, Articles, & Work Overviews**.
What book did he write that became a long-running musical?
Click on the tab labeled **Additional Resources.**
How many web sites are listed? _____ Explain the value of these web sites?

Your Library, continued

Search Engines

The first place students go to find information these days is the Internet because it is easy and they always find something. They can cut and paste and be done. Asking for instruction about searching and selecting information is often the last thing students will do because, for many high school assignments, it is too easy for students to cut and paste someone else's work, it isn't the "best" place to look for information for many assignments, and because it is often difficult to determine the source for information found at a web site. But, the SLMS teach students to begin their research with reliable resources prepared by known authorities before tackling the sometimes less-than-reliable Internet. In this progression of finding books through the online circulation system, and then finding articles from the online subscription services, students find accurate information, keywords, and phrases that will help them develop various perspectives of their topics.

To continue teaching careful selection of materials, the SLMS have posed questions at the top of the search engine section of the library web page to make students think about where they have looked, what they have found that is appropriate for their topics, and where they should look next. Since students tend to go to Yahoo!, AskJeeves, or Netsearch first, no matter what the assignment, the questions serve as suggestions as to where else they should consider looking, depending on the project, before they search the Internet. Links to search engines that meet research needs of projects for high school students follow.

Example: http://www.fcps.edu/McLeanHS/library/libraryws/search.htm

The search engine logos are placed next to brief descriptions of what can be found using different search engines and what their strengths are. For example, students are advised to use Alta Vista if they need to find images or videos. They are pointed to Yahoo! for history topics and for studying countries, particularly if they need information in other languages. Go.com (the old Infoseek) is suggested for business and health topics. Google is recommended for everything. Sample search strings are included, such as "brine shrimp" which is more specific than "shrimp" and special features are identified, such as advanced or Boolean searching, date range specification, returns by relevancy or currency, and full or abbreviated returns.

The SLMS use this part of the web page to demonstrate:

- comparisons among the various search engines by using the same search string with two or three different search engines and examining the returns, demonstrating the value in using more than one search engine for finding information about their topics,
- how to build a search string: castles AND ("Middle Age*" OR medieval) AND NOT tourism
- the variety of ways different search engines display returns,
- special features of search engines such as "Find similar pages,"
- how to learn the vocabulary of a search engine and to read returns for contextual clues (Suppose you are trying to find out what products the USA imports from France. Students will type the word "import" into a search engine and be surprised to receive returns instead about importing documents to computers.),

Your Library, continued

- how to read returns to find keywords or phrases to try that relate to another aspect of a topic.

How to Cite

When students have completed gathering and synthesizing their information, they need examples of how to cite their resources. Students often struggle with this mechanical part of their projects, but with the library web page, they can take their completed Research Resource Worksheets printed from the "Assignments" section and switch to the "How to Cite" section to use the automatic citation-maker. Or, they can look at citation examples to verify their accuracy or print out a copy of the McLean High School MLA Stylesheet of examples of citations to use in creating their Works Cited pages.

Students are pointed to the library web page of citation tools at the beginning of their projects when the SLMS demonstrate how to use the automatic citation maker. The SLMS discuss plagiarism and copyright issues with their students, promoting ethical use of the intellectual property of others. They also encourage students to use the citation tools on the web page to complete their citations right when they find useful resources, rather than leaving this task until the night before the paper is due when they should focus on writing their papers.

The library web page has made it easier to teach students how to find information for their projects, to collaborate with teachers, and to provide our school community with quality, well-organized information. Students and teachers have access to these resources from any Internet-capable computer they choose to use, whether they work at school or at home. Students learn to access information efficiently and effectively, to evaluate information critically and competently, to use information accurately and creatively, to strive for excellence in information seeking, and to practice ethical behavior in regard to information and information technology, thus meeting information literacy standards 1,2,3,6, and 8. (AASL & AECT, 1998) Our goal is to produce competent searchers and independent life long learners. The library web page is helping us make that happen.

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American Association of School Librarians and the Association for Educational Communications and Technology. Information Power: Building Partnerships for Learning. Chicago: American Library Association, 1998.

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Desktop Video Editing: Where We Are Now

by Tim Stahmer

Published four years ago in the Spring VSTE Journal was an article written by my partner in multimedia, Sharon Tomkins, and me that detailed using desktop video editing in your classroom. At the time, we were writing about a relatively new program, Avid Cinema, which was the only inexpensive, easy to use package available for teachers. It was, however, a big leap forward for prospective videographers like us (with little money and even less time). Despite the bugs, we finally had a program that would allow us to take miles of videotape and easily edit down into a form that people would actually watch.

So, where are we now, four years later? For one thing, Avid Cinema is gone. However, the tools that have come to replace it have made editing video on personal computers even easier. Today, video editing as tool for the classroom, is more accessible than ever.

In the original article we outlined four steps to producing a video project: planning and recording the video, importing the video into the computer, editing the movie and exporting the movie back to the camera. These steps haven't really changed, although planning should probably be a step by itself since it is the most critical piece for a successful final product. A good plan for your project will save many hours and many headaches down the line.

While the need for a good plan hasn't changed much in four years, the cameras certainly have. The large analog cameras we used in 1998, the ones that had to rest on your shoulder, have given way to small digital cameras, some of which fit in the palm of your hand. And, while the prices are not what you would call "cheap," they are very reasonable for the high quality of the video and extensive list of features you get with most models.

Good, basic digital camcorders now sell for under $600. Models with advanced features, such as the ability to record good quality video in low light situations, which sold for $10,000 four years ago, are less than $1500. Analog camcorders are also smaller and cheaper, starting at less than $200, but anyone serious about video will want a digital

Desktop Video Editing, continued

camera. In addition to better quality video to start with, digital information transfer to and from the computer will very little loss in quality.

(If you'd like to know more about camcorders and how to buy them, read this article on the How Stuff Works web site: http://www.howstuffworks.com/camcorder.htm)

While the development of relatively inexpensive high quality cameras is a large factor, another piece of technology that has made desktop video editing much easier is FireWire. Invented by Apple Computer, FireWire (also known as IEEE-1394 or iLink in Sony's world) is a protocol for the high-speed transfer of digital information between devices. Almost all digital camcorders come with a FireWire port and the programming that allows the camera and editing software to talk over the FireWire connection.

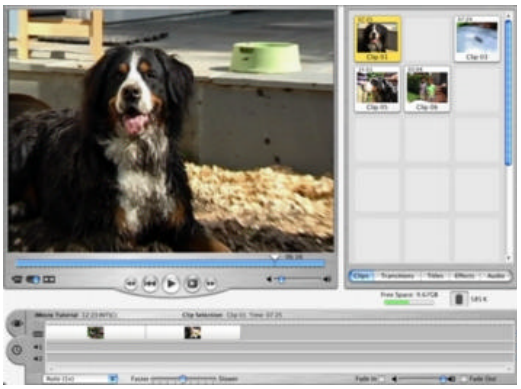
At the computer end, all new Macintosh computers have come with FireWire ports for the past two to three years. Many Windows-based computers are now shipping with FireWire cards installed or they can be ordered as an option. A FireWire card can also be added to many computers for less than $50.

So, step one is to plan the project and record the video. And, with a digital video camera, we have the means to easily transfer that video to the computer with very little loss of quality. Next, we need some software to allow us to edit the video down into a length and format that will tell the story we want to tell.

For many Macintosh users, that part is simple. An excellent video editor came installed on their hard drive in the form of iMovie. Although the interface of the iMovie software resembles the old Avid Cinema in many ways, there are many improvements that make the editing process so much easier, not to mention having to deal with fewer bugs.

One of the best features of iMovie is that the software will control the camera for you. With older programs using analog cameras, the process of transferring the video to the computer often required two people, one to work the camera and one to operate the software. Now, just plug the camera into the computer and run the software. iMovie will start and stop the camera and show everything on the tape as it is being played.

The actual editing process has also been made easier and is now a matter of drag and drop. As the video is imported into iMovie, it is placed in a holding area called the Shelf that looks a little like a slide rack. In fact, the program can be set to separate each scene in the video into clips and place them in the rack automatically. Once there, the scenes can be dragged into the time line in the order they are to be seen in the final movie. Each clip can also be edited



Desktop Video Editing, continued

using the now familiar cut, copy and paste functions found in almost every piece of software.

After the scenes have been placed, then it's time to add a little spice to the movie. As with earlier programs, transitions between scenes can be inserted, titles can be overlaid for identification or credits and audio can be placed behind the video. iMovie allows for drag and drop placement of transitions and titles into the movie.

Once the movie has been edited, iMovie also makes it easy to export the final product. Depending on the equipment in your computer, you could have three choices for the final format. The most basic of these is to record the project onto video and iMovie will take care of that automatically. Just make sure the camera is connected using the FireWire cable and turned on and that it has a blank tape in the drive.

A second choice would be to export the video to QuickTime format. While earlier programs also supported QuickTime export, iMovie offers many more options. Depending on the setting you choose, your project could be posted to the web, added to a CD ROM, inserted into a PowerPoint presentation, or used in any application that will accept video.

The third option is to burn the video to a DVD. Many Macintosh models come with a DVD burner and a piece of software called iDVD that makes creating a DVD that will play in most standard players. If you choose, iMovie will export the final product to a format that iDVD can easily use.

That's fine if you have a Macintosh, but what options do Windows users have? Actually, there are several inexpensive software packages to choose from. Most labeled DV will work with FireWire to send video to and from most digital cameras and the process of editing the video is very similar to that in iMovie. The best reviewed of these is the Pinnacle Studio DV package which sells for around $130 and comes with a FireWire card for the computer. Before buying any video-editing package, however, do your homework. Make sure that the product will work in your computer and that you have plenty of hard drive space remaining.

Even with all the technological changes to the process of desktop video editing, there is still one part that hasn't changed - the question of how we are going to use it in the classroom as a learning tool. As with all technology, even if it is very accessible and easy to use, it shouldn't have a place in the classroom it unless it helps students learn.

In the Journal article four years ago we discussed several ideas for using video in the learning process. Most of these suggestions are still valid and are reproduced here:

- Students, instead of writing about what they did last summer, can edit the pictures they took into a video diary. (Teachers could do the same.)
- Role-playing activities take on a whole new meaning when they can be taped and edited into a presentation for the class.

Desktop Video Editing, continued

- For the science fair, students could video tape the procedures they used in creating their project and edit it to show the process behind the final product.
- Students could complete a research assignment, analyze the information and present the salient points to the class.
- Selections of student work can be summarized to videotape and taken home for parents to view.
- Foreign Language portfolios of student progress can be recorded to CD-ROM.
- At Back to School Night, a short video could tell more about the school than dozens of talking heads.

As we also noted in 1998, video is not a technique for everyday use. It is, however, a powerful tool for both students and teachers to present information, opinion and creative ideas. The combination of digital cameras with inexpensive, easy to use software makes video editing an even more compelling option for classroom use than it was four years ago. And, I expect, it will only get better.

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More articles about video editing in the classroom, including links to tutorials and product comparisons, can be found at http://www.assortedstuff.com/otherstuff/

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The Relationship Between Technology and Special Needs Students

By Sloan Lawson

The Example of Joey

Joey is a student who has cerebral palsy and is also considered deaf, blind, with some cognitive disabilities. This originally posed a challenge for the school in which Joey attends but the school found that by using adaptive technologies, he could have many more academic opportunities. The special educators who supported Joey to be included in regular classrooms were not aware that there was more technology available than just a wheelchair and a computer to support his needs (Sax, Pumpian, & Fisher, 2001).

Joey used some commercially available technological devices as well as customized devices that enabled him to spend more time within general education classes. For example, Joey's first academic success occurred when he used devices that could be switch-controlled. Many different appliances were used with a switch so that he could more easily participate in the class. For example, during the class's silent reading time, Joey had a switch that he used to turn on a tape recorder, which played the same book the other students were silently reading. Another way he used a switch-controlled device was with a small light to attract the teacher's attention. These are some examples of ways in which the educators at Joey's school used technology in capacities other than just in computer use (Sax et al., 2001).

The example of Joey shows the importance of using technology for the education of special needs students. Technology, including assistive technology, has enhanced the opportunity for special needs students by providing tools and software to customize learning to their individual needs. Many types of technology are now available to help special needs students, including software for different learning levels and abilities, as well as devices to accommodate disabilities. Technological tools help to increase the learning potential for special needs students.

Inclusion and Technology

As technology allowed Joey to progress academically, he was then included more within general education classrooms. Inclusion is becoming a more regular approach for the education of special needs students. Inclusion is an educational strategy that educates students with special needs in the least-restrictive environment with their peers. This occurs for as much of the school day as possible, usually within in a general education classroom. Each special needs student has an IEP, or Individualized Education Program, which notes everything that is necessary for inclusion to be

Special Needs, continued

successful for this type of child (Merritt, 2001). This would be the document that would explain what technology that particular student needs to accommodate their disabilities. Because inclusion has become more frequent within schools, it is necessary for technology to become more a part of the special education curriculum because technology can help these students.

It is necessary for students with disabilities to be involved in the processes taken to make them successful students and specifically in the development of their IEP. Typically teachers, parents, administrators, and counselors develop the students IEPs and because students are usually not involved, they do not feel ownership over their programs (Zickel & Arnold, 2001). One way to include students more is to receive their feedback on the success of technology and also ask for any ideas as to which types of technology from which they may benefit. Often, younger generations are more receptive to technology than older generations so it is important to consider the students' ideas because they may higher interest and knowledge of technology.

As inclusion becomes more prominent within school, teachers must learn how to manage diverse classrooms and apply technology to all learning levels and needs. Sandy Merritt was an experienced teacher of 29 years within the regular classroom and then she accepted an opportunity to have an inclusive classroom. As she embarked on her first year, she realized that inclusion looks different for each child because it is an individualized strategy. She had one student from whom she learned much about the way technology helps special education students with their learning. Kim had multiple disabilities from low muscle tone and because of this she struggled greatly with writing. She was unable to hold onto a pencil, and therefore unable to manually write. As soon as Ms. Merritt and Kim shifted their attention to using a keyboard, instead of a pencil, she was able to write with the help of the computer (Merritt, 2001). The use of this piece of equipment made a task, which had been quite laborious for Kim, become much easier and manageable.

The Challenge of Technology with Common Disability Groups

There are four common disability groups and these include hearing impairments, cognitive/language impairments, mobility impairments, and visual impairments. Hearing impairments can range from people who may not be able to distinguish words, but hear some sound, to those who hear nothing. Second, cognitive/language impairments can range from dyslexia to difficulties with problem solving, comprehending or using language. Next, mobility impairments are caused by different illnesses or accidents and can cause poor muscle control, or weaknesses. Lastly, visual impairments range from low vision, which has symptoms of dimness, haziness, near or far-sightedness, color blindness, and tunnel vision, to blindness (Microsoft Corporation, 2002).

The use of standard technology and equipment, which has not been customized for disabilities, can be difficult for students who have any of the above disabilities. For example, students who attain hearing impairments may not be able to hear computer prompts such as beeps or spoken messages. Furthermore, technology can be problematic for people with cognitive/language impairments as they tend to struggle to grasp complex or incoherent visuals or text. In addition,

Special Needs, continued

mobility impairments can make using keyboards and mouse devices difficult. Lastly, visual impairments obviously make using a computer difficult, as they cannot necessarily focus on the screen. However, there are technological developments which aide in the use of certain technological devices (Microsoft Corporation, 2002).

Hearing Impairments

First, there are several resources available for students with hearing impairments because they need visual signals for information typically conveyed by sound (Microsoft Corporation, 2002). People with deafness struggle with communicating with the world around them. For students, this can mean having a translator constantly by their side and not many teenagers like this. This concern led Ryan Patterson, a 17-year-old high school student in Grand Junction, Colorado, to develop a computerized glove that translates finger spelling sign language into lines of text (Thomas, 2002).

Although the glove is not yet available, Ryan feels that it may be in less than a year. The glove looks similar to a golf glove and is worn on the left hand so that people can still use their right hand to write. The glove contains sensors and a small transmitter, similar to the size of a 9-volt battery and with the glove there is a handheld receiver that reads the hand gestures and displays single lines of text automatically. This glove could prove to be beneficial for special education students who are enrolled in regular schools because it would provide them a means to communicate with their speaking peers and prevent them from feeling isolated within their schools (Thomas, 2002).

Cognitive/Language Disabilities

For students with cognitive/language disabilities, writing can be an effort. Frank Smith (1985) said: "The more your write, the better you write; the better you write, the more you write." It is important for all students to write because to attain academic success, students must be able to express their ideas, feelings, and information in written form. With the increase in technology, there are alternative means for students to improve their writing skills, such as writing to pen pals through traditional letters or writing to e-pals via the computer (Stanford & Siders, 2001).

For students with disabilities, writing can be a challenge because they struggle to produce text, have a limited knowledge of writing skills, and labor to plan and revise their text (Graham, Harris, MacArthur, & Schwartz, 1991). Their writing skills tend to improve at a slower rate than the writing skills of students without disabilities. Students with learning disabilities are also concerned with the physical constraints that can affect their handwriting and worry about the aesthetic qualities of their writing. They can become preoccupied with the appearance and worry less about the content and quality. Technology can help by minimizing these problems and allowing these learners to think more about the content and less about the appearance (Stanford & Siders, 2001).

After studying three groups, one who corresponded via the computer, another who corresponded via the traditional pen pal method, and the last who wrote to a fictitious audience, the study showed that all of the e-mail students improved their writing skills. The social context proved to be a key component in the success of writing for students because they appreciated a real response from the person to

Special Needs, continued

whom they corresponded. The interactivity encouraged the students to continue writing, thus improving their writing skills. This study showed that using technology through e-pals proved to help special needs students with their writing skills (Stanford & Siders, 2001).

Another study proved that using digital copies of texts can be advantageous for students with disabilities, and showed they can perform better academically. One major advocate of this strategy is David Rose, who is co-director of CAST (Center for Applied Special Technology). He supports that digital versions of books are more advantageous for students with disabilities than books in print. The content is the same in the two versions but the way in which the content is laid out in the digital form is very different and this difference is vital for students with impairments. In the print versions, the text is permanently set on the page and cannot be adjusted. With a digital version, on the other hand, the content can be augmented so that the display can meet the needs of various learners (Behrmann, 2001).

Rose used the book To Kill a Mockingbird in digital form with several special needs students. Several of the students had visual disabilities but Michael had more cognitive disabilities. He had dyslexia and with an electronic file, he could click on a difficult word to have the computer read it aloud or provide a link to a definition. In a study of 109 students, of whom most had a learning disability and "were performing at least two grade levels below their peers," (Behrmann, 2001, p.87) the use of digital texts showed great improvement. The students were able to achieve "a half year's progress after reading only three novels," (Behrmann, 2001, p.87) as well as increasing their standardized test scores. This study showed that electronic versions of traditional educational materials could greatly lessen the barriers for students with disabilities (Behrmann, 2001).

Mobility Impairments

For people with mobility disabilities, they can use on-screen keyboards as opposed to a standard keyboard. They also can use keyboard enhancement utilities, such as a keyboard filter, to increase typing speed and make typing easier. Voice input aids insert data by someone's voice as opposed to using their hands (Microsoft Corporation, 2002). A student with severe physical disabilities can use technology that enables them to turn the page of the book, for example, by blinking their eye (Behrmann, 2001). These are all developments that can help a student who struggles with basic movements, find academic success.

Visual Impairments

There are also devices available for students with visual impairments such as screen enlargers and magnifiers, which help because they can enlarge the part of the screen the student wants to view. Screen reviewers and readers are designed for blind people and make on-screen information accessible as synthesized speech or in a Braille display (Microsoft Corporation, 2002). In addition, visual impairments prevent the students from being able to see what they are writing unless they put their nose up against the paper. They also struggle to read what the teacher writes on the board as well as needing to read books in Braille (Waddell, 2001).

Special Needs, continued

Teachers can help learners with these types of impairments by using information and communications technology, or ICT, which are tools to help students with their visual needs. This occurs because ICT examines their specific needs and provides them with a tool that gives the learner the freedom to make adjustments to the presentation and output of the equipment (Waddell, 2001).

Leslie Waddell provided examples of students who have various types of visual impairments including Phillip who has congenital nystagmus and myopia, which means he has a hard time seeing details and uses his peripheral vision more than normal. His impairments impact him in the classroom and she specifically mentioned his struggle during the class literacy hour. Because he cannot see the resources the rest of the class uses, he uses his own copy that he reads with a CCTV magnifier. A CCTV magnifier enables Phillip to magnify and control the image as necessary so that he is able to read it (Waddell, 2001).

Funding for Technology

Carroll Springs School is a school in Maryland for students age 3-21, who require intensive services ranging from physical therapy, occupational therapy, speech and language therapy, and individualized education. They have severe disabilities and are all educated at this particular school. Because of a state grant called "Technology in Maryland Schools," Carroll Springs School received $40,000 in state funds and $5,000 in local funds. These funds allowed this school to purchase various technological devices that the staff had desired for years (Breslin, 2002).

They purchased 11 computers with large monitors, 10 scanners, three LCD projectors, a digital camera, and specific hardware. One type of hardware they purchased was Intellikeys a computer keyboard with symbols or pictures. This device allows students to greet their peers, and describe the weather, for example, by the touch of a key, which is quite a breakthrough for these students. They no longer are constrained to communicating with their teachers through eye contact or by touching a device that triggers a prerecorded response. The software this school now attains makes activities, such as communicating, much easier for these students (Breslin, 2002).

Not only did this grant help the students but also helped the staff at Carroll Springs. The grant provided money to fund teacher training and money to pay for substitute teachers while the regular staff learned how to use their technological resources. The teachers now all have computers and equipment within their classes and no longer have to take students down the hall to the computer lab (Breslin, 2002).

Changes in Technology Use in Special Education Programs in California

A study was conducted in 1994 to look at the changes in technology use in the special education programs in California. The study was based on a previous study administered in 1987 and presents the changes in results from the 1987 study to the 1994 study. "In the late 1980s, almost all U.S. schools owned at least one computer (Office of Technology Assessment, 1988); by the early 1990s, the national average had risen to 1 computer per 16 students" (Market Data Retrieval, 1993). The 1994 study used the same sample of districts and replicated the original study to calculate the change.

Special Needs, continued

In 1994, only a few more teachers had greater access to technology and used it more than the teachers surveyed in 1987. The study revealed that 88% of teachers in 1994 had a computer to use in their classroom compared to 87% of teachers in 1987. The instructional uses of technology changed for special education teachers because in 1994, 46% of teachers used "talking computers" (computers with CD-ROM drives, and assistive devices such as special computer keys and switches.) In 1987, the instructional uses of technology consisted of computers with speech synthesizers, and drill-and-practice software (Lewis, 1997).

Both studies show that computers and other technologies are becoming quite common in special education programs. The 1994 study revealed that current technologies for special education include portable Braille note takers, reading machines for blind students, real-time recording of speeches for deaf students, voice-driven word processors, and many software programs (Lewis, 1997).

In addition, the study showed that most special education teachers have a computer permanently within their classroom. The teachers use the computers for word processing and database management, assessment programs, as well as for the IEPs (Lewis, 1997).

The increase in technology enabled students to participate more within general education classes. The common instructional uses of technology for these students were for writing and reading with assistive devices such as special computer keys and switches. They also used the talking computers and computers with speech synthesizers or Braille programs (Lewis, 1997).

Because technology is now more accessible, students are progressing with the help of these devices (Lewis, 1997). Several positive effects of the use of technology for these students are improved academic performances and self-concepts. In addition, students are able to determine their own work pace.

Analysis

Special education students struggle with not only trying to get through school and do well academically, but also having to work with an extra burden, their disability or impairment. This poses a hardship for many students and means that they must work extra hard to sometimes accomplish the basic skills necessary in school. Many of these students would embrace any tool or device that could help to alleviate the strain of their disability. Technology has proven to be a way in which students can spend less time working through their special need and more time on their academics.

Through actual studies and research as well as hands-on experience, it is obvious that technology enhances the opportunity for learning for special education students. Technology enables educators to customize curriculums for the educational needs of these students. This allows special education students to spend more time within general education classrooms and gain exposure to their peers.

The very areas that special education students struggle with the most, such as poor vision, can quickly be corrected by the use of the appropriate technological device. This is a breakthrough and something that can enable these students to succeed more than in previous years. Technology provides these students with a

Special Needs, continued

chance to reach their personal best because their difficulties are no longer obstacles preventing them from moving ahead academically. Instead, they can use devices or tools to make their disability more manageable.

One concern with the advancement of technology is whether or not the school systems invest and actually obtain the special equipment and devices necessary to help special education students. The study conducted in California first in 1987 and then in 1994 shows that educators are employing more technology for their special education programs. However, as education budgets are always an issue, some school systems cut back on technology as a way to cut their budgets. Educators need to examine the benefits and costs and see if the extra expense is worth the cost to help special needs students. If these students are able to reach higher levels of learning because of technological enhancements, then the cost does seem worth it.

It is important for schools to employ technology for all students but especially for special needs students. If a student is able to spend less time being concerned with their disability, and more time being concerned with their progress in school, then the cost seems justifiable. Educators need to view technology tools and the extra cost as a stepping-stone to help special education students succeed.

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Technology Management for School Leaders

By John Wenrich, Ph.D.

TMSL is a new professional development model called Technology Management for School Leaders. The emphasis of TMSL is on building the capacity of school leaders in the systemic management of technologies essential to support and extend teaching and learning. TMSL was developed at Virginia Tech through a grant from Bell Atlantic (now Verizon) and funding from the Virginia General Assembly.

TMSL is comprised of two components, a website and a face-to-face training session. The website (www.tmsl.org) is designed to provide a brief overview of eight key modules with which today's administrator needs to be familiar. The face-to-face training session uses a unique vertical slice of the administration having the Superintendent, Director of Finance, Curriculum Supervisor, Technology Coordinator, and Principals all together in the same room discussing their views on integrating technology into the classroom.

The underlying purpose of TMSL is to allow school leaders to interact with their colleagues and professional development facilitators, both in person and via distance education, to explore long-term solutions to problems they face in using technology to increase student achievement. The focus is on developing a common language and applying systems thinking to the full gamut of decisions related to a seamless, robust, cost-effective integration of technologies into all curricula. The goal is to use the technologies to extend inquiry and enhance production to increase authentic, complex learning that assists students to meet and exceed state and national performance standards.

The TMSL program asks the participating administrators to review the web site material prior to meeting for the face-to-face session. This review helps get everyone on the same page, technology wise. The web site modules are designed to give an overview of key technology components in a quick, concise manner so that a busy administrator gains an understanding of the topic without having to actually spend time learning unnecessary skills.

During the face-to-face training session, TMSL facilitators work closely with the local division team to assure an understanding of the topic and how it relates to their division and school level setting. Facilitators present content material designed to meet the needs of the division and also work in small groups with the local team

Technology Management, continued

to discern scenario concepts presented. The scenario discussion allows the participants to interact with individuals outside of their department. This interaction helps all parties understand the various viewpoints present during any technology-related discussion.

In 2001, the Virginia Department of Education working closely with Virginia Tech, the University of Virginia, and VETA (the Virginia Educational Technology Alliance) formed a partnership to provide administrator training to all Superintendents and Principals in Virginia over a three period. Known as VITAL (Virginia Initiative for Technology and Administrator Leadership) this program is currently being rolled out to school divisions in each of the eight Superintendent regions within the state (www.virginiaedleadrs.org.)

The VITAL program (currently funded by The Bill and Melinda Gates Foundation) relies heavily on the TMSL material as well as the eTIGER administrative program developed at UVA. During the initial start-up year for the VITAL project (2001-02), evaluation results have been very positive towards this type of approach to assist administrators with managing technology in the schools.

One of the additions to the program that VITAL brings to the table is TAGLIT (Taking a Good Look at Instructional Technology). TAGLIT is an online survey component that looks at the Principal and teachers understanding and uses of technology in the individual school building. Results of the survey are provided to the Principal for use in technology planning and submitting grant applications.

TMSL is not a program of hard facts. It is designed to get at the real issues behind instructional technology. What percentage of the overall budget should cover technology? Should technology furniture be part of the technology budget or the facilities budget? It teaches an individual how to fish, instead of just giving them the fish.

The TMSL materials have now been combined in the VITAL program available to all school divisions in Virginia. For more information on VITAL, please see www.virginiaedleaders.org or contact the author.

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What Benefits Occur When Schools Engage in KeyPal Exchanges?

By Diane DeMott Painter, Ph.D.

I read with great interest Judi Harris' article, "Wherefore Art Thou, Telecollaboration" published in ISTE's March 2002 Learning and Leading with Technology Journal. As the technology coordinator at The University of Texas-Austin, Harris has researched the use of computers in American schools and reports that more than 95% of U.S. Schools are now connected to the Internet and that 80% of the classrooms have Internet access. However, eighty-four percent of U.S. teachers surveyed in 2001 agreed that Internet access can improve the quality of education; and yet, only 33% said that the use of online resources is well integrated into learning and teaching in the classroom (NetDay, 2001; CNN, 2001).

Harris identifies 18 different types of telecollaborative activities, divided into three categories that can be used to enhance the quality of education: interpersonal exchanges, information collection and analysis, and problem solving. But most educators are not taking advantage of the Internet to provide telecollaborative experiences. Harris asks the question, "What's the problem?" According to the survey data, 78% of the teachers indicate that "lack of time" is the single most important reason for not using the Internet more in the classrooms.

The reason for my personal interest in her article stems from my own experiences with telecollaborative projects. Since 1990 I have participated in several telecollaborative projects with students at three different elementary schools in Fairfax County, Virginia. These three projects were designed to promote cultural and environmental understandings about life both here in the United States and in other parts of the world. For the most part, the projects have been successful, lasting most of a school year and bringing students a tremendous gain in knowledge. One project linked sixth grade students with Grade Eight students at Zakladni Skola Omska School in Prague, Czechoslovakia. American sixth graders composed messages asking about music, dress, and other typical adolescent interests. The Czech students asked questions about our U.S. government and they also expressed concerns about their country's political problems, mostly worried about the downfall of their communist government and the unrest among the different ethnic groups. Many students predicted in their e-mail messages the uprisings that did indeed occur later in Czechoslovakia. This project earned an award from the Freedom's Light Foundation, a nonprofit organization founded to promote the principles of freedom and democracy throughout Eastern and Central Europe.

KeyPal Exchanges, continued

Another project linked my fourth grade students with a private Catholic high school in Melbourne, Australia. The fourth grade students compared and contrasted Australian geography, climate, language, animal life, government, and traditions with what they were studying about Virginia. In exchange, the fourth grade students helped the Australian students conduct research for their environmental science class. The high school students needed to research the types of household products that were produced in the U.S. that involved testing the products on animals. The fourth graders' research of products they found in their homes provided firsthand information- that is, primary research data-for the Australian students to use in their environmental science reports. The fourth graders also became aware of how animals are often used in industrial experiments. This sparked some interesting discussions about animal rights. We called this telecommunications project "Online to Australia", and the Commonwealth of Virginia's Department of Education recognized it as an exemplary telecommunications project in June 1992.

I have had some unsuccessful attempts to establish meaningful telecommunications projects, however. In each of these cases, one or two exchanges were made but interest on the part of our partner schools waned half way through the year. For example, three years ago we tried to establish a telecommunications exchange between one fourth grade class in a school located in the southwestern part of Virginia with one of our fourth grade classes at my current school, Deer Park Elementary. The purpose of the exchange was to compare and contrast the economics, culture and geography of the rural, primarily agricultural and coal mining area of Southwestern Virginia with the highly developed commercial urban area of Northern Virginia. The southwestern school e-mailed Deer Park School halfway through the year saying it was too hard to schedule time for electronic mail exchanges. Apparently their students had only one computer they could use with an Internet connection and that connection was in the library. Therefore, the difficulty with accessibility became a major issue contributing to an early end to the project.

The connections for these projects were made via word of mouth. A professor from George Mason University helped establish the link with the school in Czechoslovakia. The Australian connection was made when I stumbled across a request to establish a link from the Australian teacher when she had posted a message on a listserv bulletin board. The link with the school in the southwestern part of the Virginia was made when I met the teacher at a Virginia Society for Technology in Education (VSTE) Conference.

KeyPal Project with England

In April 2001 we got another chance to initiate a telecollaborative project with a school in Europe. Ike Garrison, an administrator from the Oxfordshire School District near Oxford, England, visited Deer Park Elementary when touring schools within Fairfax County. Interested in exchanging curriculum ideas with our school, Mr. Garrison proposed a telecollaborative project that would involve grades K-6, and would focus on exchanging ideas and information that support the curriculum found in both our school and one school in the Oxfordshire School District. Mr. Garrison "matched" us with Northbourne Primary School in Didcot, England. Didcot is a small town not too far from Oxford, the home of Oxford University. Although funded by public taxes, Northbourne also has an affiliation with the Church of England.

KeyPal Exchanges, continued

This telecollaborative project began with a different twist when compared with my previous telecommunications experiences. I was invited to fly to England and visit with the staff and students of Northbourne School before beginning the project. Since English schools do not break for summer recess until the end of July, I was able to spend three nights and four days in Didcot, visiting Northbourne School and touring Oxford. I was hosted by the school's principal, Mrs. Kathleen Cook, and her husband, Dr. David Cook, a fellow at Oxford University. I found this "pre-visit" both exciting and helpful. I took pictures of the school, children at recess and in their classes and shared them with Deer Park School staff and students in September. While in England, I also stayed with some of my American friends assigned to the American Embassy in London and had the opportunity to be a tourist. I purchased educational materials written in England that we now use in our fifth grade social studies program on the Middle Ages such as books on castles, knights, the Crusades, English kings and queens.

In October 2001, the Northbourne "teaching" assistant principal, Ms. Heather Delaney, flew to Virginia and spent a week as a guest in my home, visiting Deer Park, its staff and the students. At that time we were able to formally outline our project objectives and the timeframe that we wanted to follow in order to accomplish those objectives. Ms. Delaney teaches a 5/6 combination class and she was able to bring back items from Virginia such as a wall map of our state, pictures about the American Civil War, state flag and images of historical sites around the Washington, D.C. area.

The Structure of the Project

We decided that our focus of the project would be to discover "What benefits occur when schools engage in KeyPal Exchanges?" The participants were chosen when volunteer Deer Park teachers from each grade level K-6 were matched with Northbourne teachers who teach similar age groups. Northbourne classes are multi-year (combination) classes but Deer Park classes consist of only one grade level. For example, Northbourne teacher, Mr. Dave Gibson, teaches the Year 5/6 class and his students are ages nine through eleven. His Deer Park KeyPal class was Mrs. Tyler-Smith's fifth grade class of students ages ten and eleven. In addition, the Deer Park librarian, music, physical education and art teachers also volunteered to work within the project, but they primarily corresponded with Ms. Delaney since Northbourne's classroom teachers teach the "arts" classes and she agreed to share the information with them.

After reviewing each school's curriculum, it was decided that partner classes would decide on their own reasons and objectives for corresponding, but in some cases, specific projects would be implemented:

Artwork Exchange. Pictures of student artwork taken with a digital camera along with grade level curriculum areas that correspond with the artwork would be exchanged. Our exhibit can be found on the Deer Park art web page: http://www.fcps.edu/DeerParkES/kids/art/kinder.htm and http://www.fcps.edu/DeerParkES/kids/art/stepintoarts.htm) In July 2002 the Northbourne School will post student artwork on their web page. This artwork will be submitted to the Oxfordshire District arts festival.

KeyPal Exchanges, continued

Hopscotch Around the World. Using the book, Hopscotch Around the World, both Northbourne and Deer Park students participated in beginning of the school year hopscotch activities during PE classes. The hopscotch games are played in the U.S. and Great Britain. To view the layout of these games and read the reactions of the games from the Virginian students' points of view, see: http://www.fcps.edu/DeerParkES/kids/Hopscotch/hopscotch.htm.

Language Arts Projects. Coordinated by Deer Park's librarian, Carol Clement, Deer Park sent to Northbourne the 2001-2002 Virginia Young Readers selection (a set of primary and a set of intermediate fiction and nonfiction books). These books are not generally available in England. Northbourne teachers either read the books aloud to their classes or students read them and then they asked questions and made observations about what they had read through keypal exchanges. In March, both Deer Park and Northbourne students were polled to determine which Virginia Young Readers books were favorites. Both the Deer Park Students and the Northbourne students chose the book The Secret of Platform 13 by Eva Ibbotson as the elementary favorite. Deer Park students chose Hooway for Wodney Wat by Helen Lester as the primary favorite book, and Northbourne students chose Tough Cookie by David Wisniewski as their primary favorite book.

Several e-mail discussions were made between classes with regard to the Virginia Young Readers books that the English children read. Ms. Delaney observed that her English students were unfamiliar with the American Civil War. However, after reading the book on Molly Bannaky, the children learned about the slave trade to America and the fact that the British banished their criminals abroad.

Specific words or phrases found in the American literature were also fascinating to the English children. In the book, You're a Brave Man, Julius Zimmerman, children read about a child being "a loser." Ms. Delaney wrote that her children found "this a very difficult phrase to accept and it was quite a topic of discussion." In the book, Not My Dog, there is a description of the character Ellie "throwing up." Ms. Delaney had to explain what the word meant to her students, meaning Ellie was "sick to her stomach." The English children kept a list of all the new "American" words they were learning: recess (break); sidewalk (pavement); math (maths or numeration); vacation (holiday). Younger children seemed to be most fascinated with the American spellings of words found in their Virginia Young Readers books.

A second reading project involved polling students at both schools to determine which of four Harry Potter books are favorites among the students. Harry Potter books are published by Scholastic Books, Inc. and are written by J.K. Rowling, an English author now living in Edinburgh. The American results are posted on the Deer Park web site at http://www.fcps.edu/DeerParkES/kids/Media/index.htm. We are currently waiting to hear how the English children view the books.

Science Project: Both first and second year students at Northbourne and grade two students at Deer Park study animals in their environment. In March and April Deer Park second grade students visited a local wetlands preserve, Huntley Meadows Nature Park. Northourne students will visit their local environmental

KeyPal Exchanges, continued

habitat center in May. Deer Park second grade students wrote about the digital images taken on that field trip: http://www.fcps.edu/DeerParkES/kids/hmeadows/huntley.htm. We are looking forward to learning about animals found in wetland environments in England when Northbourne completes that project.

Class E-mail Discussions: Exchanges were made between teachers and their classrooms around such topics as when and how the children have recess, what they like to eat, and differences in holiday traditions. For example, a Deer Park sixth grade class explained to the Year Five English class how to play flashlight tag. In return, the English students wrote about Bonfire Night, when they celebrate the capture of Guy Fawkes during the reign of King James in the 17th century. They celebrate with bonfires and fireworks since Fawkes tried to blow up the House of Parliament with gunpowder on the 5th of November.

Mrs. Seidell's Kindergarten class at Deer Park wrote to their keypal partner about our Thanksgiving celebration. They explained that it was not a festival as the English children referred to it in their e-mails. Mrs. Seidell also found it interesting to learn how the English Kindergarten class (called the Infants Class) conducts instructional groups. The English call handwriting, painting, drawing, writing and science "structured play". The American children were also fascinated by the fact that the English children wear uniforms to school.

Implications for the Future

For the most part, Deer Park teachers indicated that the keypal project was successful, interesting, fun and educational. One Deer Park teacher did not receive a response from her keypal partner class, but we think that was due to a faulty e-mail address for that Northbourne teacher.

Ms. Delaney summed up the Northbourne teachers' feelings about the project by saying that the classes seemed to enjoy the e-mail exchanges but it was disappointing that we did not have much discussion about various aspects of our curriculums. She attributed this to the fact that specific subject areas are taught at different parts of the school year. For example, our second grade students study wetland animals in their environment two months before the English students are introduced to the topic so meaningful discussions to compare and contrast the units could not be made since the units were not taught simultaneously.

Just as Harris found in her studies that a "lack of time" is one of the major reasons why teachers don't make better use of the Internet in the classroom, Deer Park teachers said they wished that they had more time to spend online. When asked if they would conduct the project differently, most teachers said they would structure the way the e-mail sessions were conducted. Most teachers either rotated their students one at a time to a computer to type part of an e-mail message or the teachers wrote the message as children dictated their thoughts. Some of the suggestions for change were:

- Have a select group of students write the class e-mail messages.
- Assign student reporters to write the messages.
- Use parent volunteers to assist students as they rotate to computers to write messages.

KeyPal Exchanges, continued

The Northbourne teachers noted a difference in the use of technology between the two schools. Northbourne's computer lab was renovated mid-year and this had a definite impact on the availability of classes to send e-mails on a regular basis. Deer Park classrooms all have Internet access so groups of students can use the computers any time during the instructional day. Deer Park makes extensive use of its school's web page to post student projects. Northbourne is just in the beginning stages of creating a school web page and teachers hope to soon be able to also post their projects and school happenings on the Internet. Ms. Delaney also indicated that they hope to be able to engage in video conferencing. Perhaps that will be our next step, live audio and visual interaction!

Resources

For teachers wishing to initiate telecollaborative projects, the Appalachia Regional Educational Laboratory (AEL) suggests that they may want to make arrangements through professional contacts or organizations committed to making those links. To find a class in another location that will exchange e-mail with your students to learn about regional history, geography, economics or to share work, especially writing, try these sources:

- http://www.siec.k12.in.us/west/slides/penpal/index.html
- http://web66.coled.umn.edu/schools.html
- http://www.epals.com
- http://www.globalschoolhouse.com

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