



**Family Center on
Technology
and Disability**

FCTD Conference Series:
Teaching Digital Natives :
Technology Tools for the
Classroom

Teaching Digital Natives : Technology Tools for the Classroom

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EXPERT'S CORNER

Introduction

For more than a decade, consumers have been in the “digital age.” Step by step, in our homes and offices, we’ve adopted first desktop computers, then increasingly small handheld devices. Our information and recreation comes to us largely in digital format and most of us store our photos and other memories digitally. We stay in touch and purchase products online, often via wireless technology; and we plan our days and weeks with the help of digital assistants so small that they fit in the palm of our hand.

Our children have grown up in this world; they are “digital natives.” However, most of them leave this world everyday, to visit another era, a bygone age, devoid of the technologies that they use with such alacrity at home. This is the world of school – a place in which they’re expected to learn all there is to learn, without the benefit of the productivity tools that have transformed our homes and workplaces. Although we’re well aware of the expanded possibilities that these tools offer for individualization of learning, for personal planning, and academic collaboration, we’ve been slow to make technology an integral part of our school systems.

This month we discuss the ways in which educators can bring a range of technology tools into their classrooms for the benefit of all students.

Experts’ Perspectives

Teaching Digital Natives: Technology Tools for the Classroom

Technology is changing at surprisingly rapid rates. It is difficult to keep up with technology in our own individual lives as many of our homes have access to high speed Internet, digital cable, digital recording of television shows, and learn the latest features on the new cell phone. In our personal lives an individual keeps up with the advancement of technology out of necessity. The purchasing of a new computer with a new operating system usually requires an update of existing software

programs. Socially, communication between family and friends who live far and near, lead an individual into exploring various "chat" clients or instant messaging programs, or creating personal family web pages. For some individuals the need is dictated by the search for a better way or program to manage the barrage of communication that comes through email.

For some people it is not out of necessity that they keep current with technology, it is their own personal desire to venture out and try new things. These would be the people that are "innovators" and "early adopters" as they embrace new technology well before most people do. They tend to belong to other "like minded" social groups and search message/discussion boards and other forums to stay on top of things.

It is usually harder in workplace settings to stay current with the rapidly changing technology. The design/structure of the workplace setting usually slows down the ability to be the same type of "innovator" or "early adopter" with technology. Budgets tend to dictate what can be purchased or upgraded, and the purchasing process may require certain levels of approval before technology can be bought. The workplace setting is also driven by their mission statement and the services they offer to the clientele they serve. If the technology does not help the company better meet their purpose, then implementing it will not be as effective.

Information

People have referred to this day and age as the "digital age" or the age of information. The ability of individuals to publish text to the web has created a great repository of information, some good and some not so good. It does require educators to teach students how to discern what information is accurate and what may be somewhat biased in nature. Just because something is written in print does not make it true.

Libraries, some local and some at universities, have electronic databases that can be searched and then retrieve the article as an electronic file. The electronic searches happen quickly, allowing the individual to collect more articles in a shorter amount of time. The quick sometimes instantaneous delivery of electronic mail has individuals sharing more or just forwarding on information that they may feel someone would find interesting. This easy/quicker access to information requires us to think about the organization and management of our files so we can be more effective in what we do.

Cutting Edge

There is an extensive list of things that could be considered cutting edge. Even though some of the technology may have been around for a few years, it is just starting to have a greater impact in schools and educational settings. A few things would include: blogs, wikis, podcasts, wireless access to the Internet, handheld computers, online textbooks, and virtual experiments/activities/field trips to name a few.

Access to these tools assists educators in better meeting the needs of their students by tapping into their students' learning styles and building upon their strengths. Whether you follow Howard Gardner's Multiple Intelligences - Linguistic, Logical-Mathematical, Musical, Spatial, Bodily-Kinesthetic, Interpersonal, Intrapersonal, Naturalistic, Existential - or David Kolb's Four Learning Types - Dynamic, Imaginative, Common Sense, Analytic - the innovations in technology tools allow educators to modify the way they teach so that all students have an equal opportunity to succeed.

The use of computers and technology allow information to be displayed in different forms, including words, images, and sounds. Students can manipulate information with greater ease and teachers can create their own courseware or support material. Technology may motivate students to work

on rewriting and revising since it reduces the recopying by hand. The Web is allowing students to "publish" their work to a greater audience than their classroom peers and increases the importance and purpose of writing. As educators we have to acknowledge that the students we are teaching are "digital natives". They are students who are growing up with technology being an integral part of their personal life, and we need to assist in making it an integral part of their education as well.

The Future of Technology

It is hard for us to imagine what the advancements in technology may bring. There is an increase in the capacity to store more information in smaller places. Computers have faster processing speeds and the capability to carry out multiple tasks at once. Similar advancements in technology that were made in the past 10 years will be made in 5 years. As these changes happen, we need to be responsive to the needs of our students and maximize what technology can do for them. We need to prepare our students, in the current educational setting, for problems and jobs that don't exist today.

The trend for technology is that it is getting smaller and more portable. Is this a good thing or a bad thing? For whom? The trend for technology is moving more and more towards a "virtual" environment (online). Basically the accessibility issues are turning "bits into bytes" (Negroponte, 1993), meaning that digitally-based information is much more "accessible" than paper. Manipulation of digitally based materials is the essence of making educational materials available for all students and the initiative behind the "National Instructional Materials Accessibility Standards (NIMAS)."

Existing Technology Supports

Innovative teachers are incorporating into their classrooms technologies that are part of how our kids live, as digital natives. How many of you have kids who wouldn't know what the world would be like without a cell phone or MP3 player? Do any of your young students point to a pay phone and ask what it is? Do any of your students refer to their iPod as a "walk-man?" Marc Pinsky, a leading internationally acclaimed speaker, writer, consultant, and designer in the critical areas of education and learning, states on his blog page, "our students have changed radically. Today's students are no longer the people our educational system was designed to teach." This leads us to an educational revolution which many futurists now see coming into a reality. With the onset of various web based and open source software being made available at little or no cost to the general public, some educators have been trying to utilize these tools within their classrooms as a way to differentiate instruction or use technology-based applications. Such tools will be discussed more in depth during this online discussion.

BLOGS

Digital native students have been "born to blog" as one author states. Many students love to share their thoughts, feelings, impressions, etc. via an electronic medium and what better way than to blog. In regards to disability accommodations, many blog authors who happen to have a disability like the anonymity which a blog can present -- all the work is done ahead of time, with no errors, and it looks like their non-disabled peers.

WIKI

How can educators create a digital native classroom that is accessible to all students, regardless of learning styles, disability accommodations, and personal preferences? According to Tony Whittingham, and his "Digital Tools for Digital Natives" online presentation, he presents a digital native classroom model of collaboration, creativity, and communication of including teachers and information technology supports. The outcomes are blogs, wikis and media which demonstrate the

Universally designed principles of 1) multiple means of engagement, 2) multiple means of expression, and 3) multiple means of representation.

Resource: <http://www.slideshare.net/tonywh/digital-tools-for-digital-natives/>

PODCASTS

Creating and listening to podcasts is another tool that can offer all students a venue to learning. Portable media players have been around for a very long time and society embraces the portability and convenience of these devices. Digitally-recorded music has opened a floodgate of possibilities for downloads onto a computer or a portable MP3 player. Also, various radio-shows and now television shows are available for downloading onto a portable audio or video player so that the user can watch or listen to any program at their convenience. This serves as a wonderfully creative way to give our students access to educational media when and wherever they want it.

WEBCASTS

More and more professional development for staff happens online for a number of reasons; time constraints, substitute support, travel, release time, etc. The online mechanisms can be an effective way to gain important professional development for staff -- however, not every staff member has an appreciation for gaining their instruction via a computer monitor and speakers.

Leading Questions

Please find below some leading questions that are commonly becoming more apparent in local school districts, surrounding the issues around digital native learners and the use of various technologies:

- Why are BLOGS, WIKIS and PODCASTS things I could or should be doing with children/students with disabilities?
- What are the social implications of conducting so many conversations between computers instead of between people?
- What about the slang and the spelling regarding online chatting or text messaging?
- What about safety issues?
- What professional development strategies can help transition our digital-immigrant teaching staff to a digital-native classroom?

Experts' Bios

Kirk Behnke

Kirk has worked all over the country in various roles around assistive technology (AT), professional development, technical assistance and service provision. Since 1988, his experience has ranged from AT fabrication to assessment, information & referral, program development and coordination, and professional services development and marketing. Along with Dr. Harry Murphy, he originally designed and implemented the "Assistive Technology Applications Certificate Program (ATACP)" in 1996 through California State University, Northridge (CSUN).



He holds a Master's of Education degree from Temple University and a certificate in Assistive Technology Applications from the University College in Dublin, Ireland. He has also gained and maintained professional credentials as an Assistive Technology Practitioner and an Assistive Technology Supplier from the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA). Kirk has spoken at various national AT and educational conferences throughout the US and abroad with a high concentration of accessible curriculum design, universal design and the use of web-based tools.

Scott Marfilius

Mr. Marfilius has been working with individuals with disabilities for the past 26 years. The past 20 years has involved implementing assistive technology at various levels.



Scott continues to assist teams and individuals in assessing students assistive technology needs. His teaching certifications are in Early Childhood Handicap, Cognitive Disabilities, Emotional Disabilities, and Learning Disabilities. His M.A. is in Curriculum and Instruction.

Scott also works with universities and has assisted in reorganizing their curriculum to infuse technology throughout the teacher preparation experience. He also consults with individuals and businesses to determine adaptations that are needed in workplace settings.

He teaches in the CSUN Assistive Technology Applications Certificate Program and holds an ATACP certificate of learning from CSUN. Scott's focus areas in assistive technology include computer access, and technologies that assist those with cognitive and learning disabilities.

CONFERENCE

Transcript: Teaching Digital Natives

- **Welcome** posted by **Jackie Hess** on Oct 31, 2007
Welcome to the Family Center on Technology & Disability's discussion of technology tools in the classroom. The lines between assistive technology, education technology and consumer technology continue to blur. As devices become smaller, less expensive, more powerful, and more ubiquitous, they offer innovative educators opportunities to support differentiated instruction and inclusion of students with disabilities. Please join us throughout the month, as we discuss this interesting and evolving topic.
 - **Re: Welcome** posted by **Scott M.** on Nov 01, 2007
Welcome! This month will be an exciting time as we discuss the benefits that new technology can bring to the learning experience. Some teachers have been early adopters in the use of the technology, and others are still determining what role they feel technology should play. I look forward to the discussions that will help each of us sort through how we use technology and what we may need to do to become more efficient users of technology in the educational process.
 - **Re: Welcome** posted by **PAMELA EVANS** on Nov 01, 2007
I look forward to learning about how to advise and embed technology in the classrooms I supervise. Our special ed district just rolled out an alternative curriculum for our students and it would be great to encourage the use of

technology along with this. Currently, I observe the computers being used for recreational purposes and for assistive purposes.

- **Re: Welcome** posted by **Kirk Behnke** on Nov 01, 2007
Hello everyone! I'm so excited to be a part of this discussion, let alone trying to facilitate the topic of "digital natives" and classroom strategies. Having a 7 year-old at home and trying to understand how he learns through various venues can be quite an eye-opening experience. I'm looking forward to discussions on how these venues can REALLY help students learn in all environments, regardless of ability.
- **Re: Welcome** posted by **Carol Harpold** on Nov 01, 2007
I am really looking forward to participating in this discussion. Engagement for our millennial students I believe means a whole different set of tools and integrating them into the curriculum. Having the time, resources and being able to step outside of the box to do that has its challenges. I am looking forward to hearing how others have achieved that in their school!
- **Re: Welcome** posted by **ebunny** on Nov 02, 2007
Hello, my name is Amy. I am a mother of an 8 year old child with cerebral palsy. We use many many forms of technology at school in a single day. I am ALWAYS looking for ideas of how to use something more, differently, or how to integrate technology into every area of school. Currently, we use Boardmaker 6, a Vantage communication device (soon to be an Eco hopefully) from PRC, a PC and a laptop with Windows XP, Writing With Symbols 2000, and hopefully soon we will have TESTTALKER.

My daughter has about a 40-50% intelligibility, and writes at a pre-kindergarten level due to poor fine motor skills. She is learning how to use the communication device, so in the future, she will be able to hit full sequences that are usually 2 or 3 hits per word, to take class notes on WORD, rather than typing it all out. This is a great reduction in hits required, over typing it all. But first, in second grade, we are using a couple of programs to teach her how to use the device.

I look forward to hearing all of your ideas that everyone can or does use in the classroom.

- **Re: Welcome** posted by **Kirk Behnke** on Nov 02, 2007
Hello Amy and welcome to the discussion. Sounds like you already have a great start with your IEP team and addressing technology issues for communication and computer access. The best advice I can share with you now is to work on building efficient strategies through the communication device for quick communication and so that it can be used as an access method for computer-based applications. The caveat is... have a back-up plan; we all know that technology breaks and the problem with using one single device for communication AND computer access is that it is one single device (putting all your eggs in one basket). I'm sure there will be ideas shared on this discussion board to enlighten you on various other technologies that could be used in the classroom to help you access the general curriculum.
- **Re: Welcome** posted by **Barbara** on Nov 02, 2007
Hello Everyone,
I work in a small, rural school division with early childhood special education students. I am looking for innovative ways to use assistive technology with my autistic students.
 - **Re: Welcome** posted by **Kirk Behnke** on Nov 02, 2007
Hey Barbara! Welcome to the discussion. I would encourage you to go to <http://www.specialed.us/autism/assist/asst10.htm> and read an article by

Susan Stokes on Assistive Technology for Children with Autism. It's a great overview to help guide you in some possible resources and address specific skills.

- **Re: Welcome** posted by **Jackie Hess** on Nov 02, 2007

Hi Barbara,

I don't know if you participated in the Family Center's online AT Institute last month, but if not, you might want to take a look at the transcript of the "Autism and AT" discussion. There were lots of excellent suggestions and resource links posted. The discussion transcript is in the "Online Discussion Archive." The moderators were Dr. Joanne Cafiero of Cafiero Communications, Matthew Goodwin of The Groden Center, and Teresa Pinder, an AT specialist who serves 7 small, rural school districts in Florida.

- **Deja vu all over again?** posted by **Ellen B** on Nov 01, 2007

I don't mean to sound like a Luddite because I'm really intrigued by the new technologies (I don't own an Ipod but I do listen to webcasts) but here's my question. I'm a 50-something, so I guess my generation could be considered television natives. In the 1960's and 70's there was a lot of talk about using t.v. in classrooms. But it never seemed to take. TV remained, at best, an "extra." In fact usually it was only a monitor for use with a VCR. Programming was never central to the curriculum, never really even used to remediate reading or math. Of course, t.v. wasn't interactive, and that's a significant difference. But I'm wondering what would make this generation of consumer technology different from television and radio, both of which could have been used educationally but, by and large, weren't. Thanks!

- **Re: Deja vu all over again?** posted by **Kirk Behnke** on Nov 01, 2007

I have a couple of thoughts.

One is that television, as a society was categorized as "entertainment" and not specifically an educational tool. Johnny Carson from the "Tonight Show" is appropriate at home, but not considered an educational tool. I think we are dealing with this issue again - through the use of MP3 players -- where many people only view them as portable music players when we know that there are many educational podcasts and recorded lectures available for download.

Second, and I think you touched on this, is the program. Television is a great tool, but it is only as good as the content being delivered. Today there is a vast array of educational content available for schools to use and some schools do take advantage.

Third, television was a one size fits all approach. Limited one way delivery of information to a vast number of people was the norm, even up to the early 90s. Today, there are customized broadcasting and special interest networks that appeal to a variety of diverse populations, customizing viewing choices to fit the viewers needs. High interest = high engagement.

Lastly, in the past one didn't have the option to "record" or pause or fast forward to a specific section of the television program. This is one reason why VCR became so popular -- what you want; when you want.

- **Re: Deja vu all over again?** posted by **AAlsbrooks** on Nov 01, 2007

I am a Kindergarten General Education teacher with several students with special needs included in my classroom. I have a SMARTBoard mounted in my classroom and take my students to the computer lab once a week to complete individual "projects." If you have the technology to use, there are endless possibilities to what you can use it for.

First of all, United Streaming is a wonderful source for curriculum related videos, approved for many different ages/grades. You can download segments of video or

whole videos on almost any topic. With the use of the SMARTBoard, you can pause the video, write on the video clip with the pen to point out specifics in the pictures, etc. With the television, as pointed out already, the programming wasn't always appropriate or related to the curriculum and many times you had to show the entire program because we didn't have the ability to show certain sections.

Second, as you stated, it wasn't interactive. Using the SMARTBoard, children can interact with any program. They are then learning the technology and the curriculum related information at the same time. Because the students are using computers at home, they enjoy it and it becomes very motivating for them. I have had several children with special needs that have a difficult time expressing themselves in the "typical" classroom setting but with the use of computers in the lab and the SMARTBoard, they soar!

Using the SMARTBoard and computer lab with my students has been a rewarding and exciting experience. I have taught them how to create Photostories, PowerPoint presentations, Slideshows in Pixie, Shape drawings in Geometer's Sketchpad, etc. I feel there is no end to the things we can teach using technology. It is a valuable resource. We have also created technology portfolios for our students. This allows the students to save their work and keep it throughout their time at our school. Because several of these programs allow you to record your speech, it serves as a valuable assessment tool as well.

Just my thoughts!

- **Re: Deja vu all over again?** posted by **AD** on Nov 06, 2007

I wanted to add a comment about the use of technology in the classroom. It is great to see it being used effectively especially in Kindergarten. That is wonderful. I also agree with the above statement about older technology not being interactive. I also think in addition to that point it is important to note that as technology advances so does the chance for increased communication for children. Children with special needs are now using more technology to communicate through speech output devices and by bringing technology into the classroom you connected that child to their peers. That is one underlying reason why this wave of technology differs and offers more to the classroom than those in the past. Just something to think about!

- **Re: Deja vu all over again?** posted by **Scott Marfilius** on Nov 11, 2007

It is exciting that our students have the opportunity for increased communication! Some students I've worked with were using voice recording email programs to stay in touch with friends. A couple of sites for voice email www.yackpack.com and www.springdoo.com. Bridgette Nicholson has an article on the Power of Voice for Writing http://www.learningtools.us/presentation_voice/

- **Re: Deja vu all over again?** posted by **Bridget** on Nov 13, 2007

Thanks Scott!!

I just spent the past two hours exploring and playing with yackpack and springdoo. It is so much fun! I can only imagine how engaged learners would be creating messages.

I imagine it would be useful for developing speaking skills, confidence, not to mention how engaging it is!!

Thanks!!

Bridget

- **Re: Deja vu all over again?** posted by **Scott Marfilus** on Nov 17, 2007

Bridget,

That's great to hear the fun that you had. I have had a couple of student who greatly improved their skills in speaking. They were in a safe environment and could practice recording as many times as they wanted to and then use the clips they wanted. It really addresses the area of oral fluency and speaking.

Scott

- **Re: Deja vu all over again?** posted by **Scott Marfilus** on Nov 02, 2007

Ellen,

I think you raise a very important point for us to keep in mind, technology should serve educational goals and not direct them. As we look at technology from the past and what it "promised" to deliver, we realize that there was sometimes a lot of hype and not quite the expected results. Going back in history there were often items that were going to revolutionize education, from chalkboards, overheads, slide projectors, to film projectors and TV's. One thing we know from the past, is that technology needs to support the classroom/learning environment. When we as teachers tried to incorporate movies into the curriculum we were often previewing the movie the same time the students were watching it. As an educator, we didn't have much control over the flow of the film or material and that made it harder to plan to integrate these tools into our teaching style.

I think now we do benefit from the fact that information is easier to access both in software programs and on the Internet. The availability of the technology also increases the ability to integrate it into lessons. I know I frequently will look for information at home using the Internet to use in future lessons, where as years ago limited access to technology prevented me from doing that. I also think during this time, what we do have going in our favor as educators, is the ongoing research in the area of learning. This is in brain-based learning and also the studies that look at individual learning styles. As educators we have a better understanding of how students learn.

With those thoughts, I come back to remind myself that technology should serve educational goals and not direct them. As we look at what we want our students to learn, achieve, master, etc. these new technologies along with old technology may be the tools that will best assist us in meeting their needs.

- **Collaborative projects** posted by **Arvid** on Nov 01, 2007

If you're a middle school teacher and want to assign your students a project that requires online collaboration, but you don't have access to WebCT or Blackboard.com, what are your options? Thank you.

- **Re: Collaborative projects** posted by **Brian Wojcik** on Nov 01, 2007

Just curious...what type of online collaboration would they be doing?

- **Re: Collaborative projects** posted by **Arvid** on Nov 01, 2007

Creating a group report, with text, graphics and photos drawn from the web, or another digital source perhaps. I've seen it done well at the high school level, with students assigned to groups and given the task of creating a Power Point presentation or Word report. The point is that the school system subscribed to Blackboard.com, which provided the collaborative space and tools. I was just assuming that this discussion would explain other ways for students to work collaboratively without necessarily having access to a commercial system like that one.

- **Re: Collaborative projects** posted by **Kirk Behnke** on Nov 02, 2007
Arvid --
Great point and a major piece of this online discussion. I have Blackboard available at our Regional center and it is great for those who are subscribed. It has a variety of features from discussion boards to voice messaging, posting & sharing documents, presentations, etc. However, because of the nature of the beast - is only available for enrolled students/participants, a great security feature, but some consider it a drawback as well.

The beauty of Web 2.0 tools is the public "sharing" of information -- not just obtaining information. Collaborative projects are a great way to demonstrate some of the newest web-based tools that are either free or at a minimal cost. If you go to the expert perspective <http://www.fctd.info/webboard/displayPerspective.php?id=503> we briefly cover 3 areas of Wikis, Blogs, & Webcasts/Podcasts to get us started.

Also, you may want to check out a wiki I developed on Web 2.0 tools for teachers and others. <http://inclusive-webtools.wikispaces.com/> I have a lot of information on the above tools, as well as social networks. Speaking of social networks, Brian Wojcik and Karen Janowski head up the Assistive Technology ning which is a great place to collaborate with fellow AT specialists. You can find out about this ning at <http://assistivetech.ning.com/>

I would like to invite everyone to post and share their classroom experiences or other resources they know about regarding wikis, blogs, webcasts/podcasts, photo sharing, social networks and other Web 2.0 tools. This is a great example of not only talking about collaboration, but actually using online tools to share collaborative efforts and initiatives!!

- **Re: Collaborative projects** posted by **Scott Marfilus** on Nov 02, 2007

To add to the resources that Kirk listed, I also found Robin Good's website Kolabora <http://www.kolabora.com/index.htm> to be helpful in being aware of the many online collaboration tools and what features they have to offer. In March they posted an article that was titled "Collaborative Writing Tools and Technology: A Mini-Guide" http://www.kolabora.com/news/2007/03/01/collaborative_writing_tools_and_technology.htm which reviews 13 online collaboration tools.

- **Re: Collaborative projects** posted by **Brian Wojcik** on Nov 02, 2007

I also monitor David Warlick's page on emergent collaborative technologies:

<http://davidwarlick.com/wiki/pmwiki.php?n=Main.EmergingCollaborativeTools>. I have found this site to be very useful.

- **Re: Collaborative projects** posted by **SSENNOTT** on Nov 08, 2007

"I also monitor David Warlick's page on emergent collaborative technologies:

<http://davidwarlick.com/wiki/pmwiki.php?n=Main>

[.EmergingCollaborativeTools](#). I have found this site to be very useful."

Brian, that list is terrific.

Hearing about the frame of the project, one simple combination would be to create a wiki using wikispaces.com and use Google Documents to collaborate on a slideshow or document.

Taking it up a notch, you could export the slideshow and then import it into Slideshare to make it have audio. Additionally, using Voice Thread, it could be a conversation piece, as that tool is perfect for layering audio.

Gosh, along the theme of digital natives, don't you wish your teacher was assigning you projects like this when you were in school?

- o **Re: Collaborative projects** posted by **KarenJanowski** on Nov 05, 2007
The beauty of web 2.0 tools are that they are, by definition, collaborative. The link that Scott sent evaluating the Collaborative Writing Tools is an excellent resource that explains the differences between the options.

At a minimum, I would recommend using Google Docs, Google Presentation and the Zoho suite and definitely use any wiki authoring site. (wikispaces is free for educators which means no ads, there's also pbwiki, pmwiki and wetpaint) These are free tools that promote multimedia, collaborative applications.

These tools are all free, promote UDL and are accessible to all students since they are digital.

- **Re: Collaborative projects** posted by **Scott Marfilius** on Nov 06, 2007
Karen

Thanks for sharing tools that are free. I know when I'm working with colleagues, the free tools are the ones that they use to get started...it's what's affordable.

Scott

- **Re: Collaborative projects** posted by **SSENNOTT** on Nov 08, 2007
Karen, I just posted a very similar response without seeing yours. Makes sense that we would think along the same lines. LOL.

- **IEP** posted by **Stephen** on Nov 01, 2007
I had the pleasure of working with students who could benefit from this topic. So I am looking forward to hearing how I can make this possible for my students to apply their IEP.
 - o **Re: IEP** posted by **Scott Marfilius** on Nov 02, 2007
Stephen,

I'm not sure if you had any specific tool in mind, but if not here is a possible place to begin. I look forward to hearing from others on your perspective.

You are starting in the right place when you mentioned your student's IEP. There are many ways to assist students in mastering their IEP Goals and utilizing technology is one means. I guess you could say technology is one path to take. Now with that said, the focus of this discussion is on technology. One way to start to sort through

things is to determine what task is the student to accomplish. Is it writing, reading, drawing, communication, studying, collaboration, analyzing, research, etc?

After the task has been determined it will be easier to start to sort through the many available tools and applications and match the technology to the student's needs. This helps us keep focused on the purpose and prevents us from becoming tool/technology driven (which is easy to do sometimes with the cool things that are out there).

- **Digital Story-Telling** posted by **Paul Hamilton** on Nov 04, 2007
I believe that digital story-telling offers tremendous potential, especially for reluctant writers and those with writing challenges. BUT, digital story-telling is also a wonderful UDL tool for engaging ALL students (and their teachers). Within the broad genre of digital story-telling there are multiple modes of expression and countless ways to represent learning. Digital story-telling is inclusive because it levels the playing field for learners with special needs. When using technology that is freely available today, anyone can create a high quality product, and any author can take pride in his or her work.

The range of options available today for digital story-telling is breathtaking. Most options involve the Read/Write Web or "Web 2.0" technology. This adds a powerful motivation factor. Learners are generally motivated by the opportunity to share what they create with a wider world that includes not only classmates, family, and friends, but also a global audience.

Of all the online applications for digital story-telling that I've tried, my favourite is Voicethread. Virtually all of the apps are built around a way of presenting images, with some form of accompanying verbal commentary or narration. I like Voicethread because the story-teller can choose to use either a microphone for audio narration or a text bubble for written comments. Response to the story can also be either spoken or written.

For anyone wishing to check out the online possibilities, probably the best place to start is Alan Levine's wonderful wiki: 50 Web 2.0 Ways to Tell a Story (<http://cogdogroo.wikispaces.com/StoryTools>) Alan helpfully describes each application and then shows examples. Although Alan's list is extensive, it isn't exhaustive.

Oops! It seems that I've gone on a bit. Sorry about that. It's one of the hazards of engaging someone who is passionate about something.

- **Re: Digital Story-Telling** posted by **CSWhitfield** on Nov 05, 2007
Thanks for the great website of resources. As a School Based Technology Specialist I have worked quite hard to get teachers to try digital storytelling and I am glad to say I have several success stories. The resources you shared will definitely help in that crusade. I hope you are familiar with PhotoStory to tell stores and also Pixie in the Imagination Suite. Those are great tools!
 - **Re: Digital Story-Telling** posted by **Paul Hamilton** on Nov 06, 2007
I've used Photo Story 3, and I really like it. The drawback is that it is challenging to post "Photo Stories" to the net, so you miss out on that motivational aspect of the storytelling. Since my focus is on free resources, I haven't tried Pixie, but I file that away as something worth trying. Thanks for the tip.

- **Requesting your input** posted by **Scott Marfilius** on Nov 04, 2007
Hi everyone. This week I'm preparing a workshop on successful assistive technology integration and I would love to hear your input.
Thanks in advance!

Think back over the past 5 years when you encountered a new technology. If you could share what that technology was and 3 or 4 things that you did, or someone else did that made integrating that new technology into your classroom/setting.

- **Re: Requesting your input** posted by **ebunny** on Nov 05, 2007
One of the things that helps teach MINSPEAK, that PRC uses on their communication devices, is to teach what parts of speech a word is. For two years, in preparation for the school actually trying to use the communication device, I had them emphasize what part of speech every word they could was.

Also, something you do to help typical kids learn to read, is to label everything in a room, using the PCS or pictures or symbols that the child would use on a device, along with the printed word, for everyone to read. Label stuff like door, books, locker, table, chair, etc. etc.

One thing I learned and wish I had known how or even ABOUT, was to meet with the TECH team for the school, BEFORE school starts. It is nice to start off the year with all cords, printers, programs installed, and what not, to start the year off right.

Amy

- **Re: Requesting your input** posted by **Scott Marfilius** on Nov 06, 2007
Great suggestions Amy. The teaching of the parts of speech would be beneficial to all students and to do that as part of the instruction would benefit the user of AAC.

I also like that comment about "upfront" planning....proactive rather than reactive.

Scott

- **Re: Requesting your input** posted by **Carol Leynse Harpold** on Nov 11, 2007
Some of my favorite successful AT tools are mid tech tools, by no way incredibly new or clever, but stuff that has just worked, can be turned on and wherever, whenever you need them. The first are the portable word processors. After having worked with the portable word processors with kids in the third and fourth grade, those same kids in 6th grade (most of them at least) now fill up all 8 files on a weekly basis and can manage them independently. Information is uploaded and downloaded to them for specific assignments to support their writing tasks. Illegibility is no longer a problem, their ability to keyboard and compose has improved and the teachers are buying into the process in the classroom!

One of the other AT supports has been the use of inexpensive MP3 players for significantly below level readers to participate with literature. It might be outdoor hunting information, summaries, novels but it is literacy and suited to the millennial student. I have found they won't particularly drag a laptop home to read a book and can't read it themselves but they would take a MP3 player to "read" and still look cool. My favorite story is the success of providing high interest magazine articles scanned and converted to MP3 and put on a MP3 player. Player went home where Dad and son listened to the articles together. Talk about engagement!

One student with a significant reading challenge used the Quicktionary Reading Pen to help her complete a tech class test at a local two year college.

I also love our Brother label makers we use with students in first and second grades

who refuse to manually write. Behaviors exhibit themselves when required to write. Although modeling and assistance may be needed by an educational assistance for spelling or thought generation, students have been motivated to "key" the answers in, print the answer take the backs off of the label and stick the label on their paper to complete a worksheet and stay engaged in the process.

Maybe not hugely inclusion or high assistive technology but it does positively support student learning and engagement where you want it and when you want it!
Hope that is what you had in mind.

- **Re: Requesting your input** posted by **Scott Marfilus** on Nov 11, 2007
Carol,
Thanks for your input and sharing your successes. You pointed out some good reasons why students would prefer different types of technology to support them in education.

Just curious....there's been some postings regarding podcasts...have you or your students done any podcasting? Or is it something you would consider?
Scott

- **QUESTION... about school policies** posted by **Kirk Behnke** on Nov 05, 2007
I have come across a couple of schools and districts that have firewalls and online security issues for internet access in the schools, while others don't have any security. I'd like to conduct a little research on this (since there is such a great audience here). What kinds of policies (written or other) do you know of on internet access, safety, firewalls, permissions for whitelists, etc.? Please no specific district names need to be shared.
Thanks!
 - **Re: QUESTION... about school policies** posted by **Bridget** on Nov 06, 2007
We had firewalls and policies in place but we had also worked very hard to develop sound relationships with our IT department. Often all we had to do was present a case for why we needed access to a specific website and how it was educationally relevant and we were able to get access to that website.
 - **Re: QUESTION... about school policies** posted by **Kirk Behnke** on Nov 06, 2007
No matter how "technical" we become as a society, we always need to remember how important it is to build relationships -- whether online or face-to-face. Thank you Bridget for sharing with us one solution of presenting a case for specific websites and access.

Has anyone come across a brick wall with their IT department and had to go through administration? Or a similar story to share on how you problem solved?
 - **Re: QUESTION... about school policies** posted by **Scott Marfilus** on Nov 06, 2007
A district that I have worked with has different levels of access for the students. In order for students to have access, their parents had to sign off on an "Acceptable Use Policy", when they did that they had to either check that their child would have "tight" restricted access to only approved sites, or "general" access to a larger variety of sites. If a teacher wanted to use a site for all students they may have to submit that site so it could be added for the restricted users.
Scott
- **Software/Hardware Acess** posted by **David** on Nov 05, 2007
What I have been hearing and seeing is what I like to call the IT ghost factor. Where are the IT prof's in the schools? I hear time and again that we can't load this or that. The specific software needs evaluation by IT before it is loaded on the network, ect.. I inform others about software that can be used for gen. ed and for spec. ed combined yet the teachers

have no training. To get the training, I can help but not enough, the teachers need time to get with an AT specialist and/or the IT professional. My son's 1st grade class has 15 brand new computers in their class, and I ask have you used those yet, "no". He has two kids with Autism in his class who use reader rabbit and jumpstart when they could be doing so much more. Any suggestions on working with IT staff would be appreciated.

- o **Re: Software/Hardware Access** posted by **Scott Marfilus** on Nov 06, 2007
David,

There are many factors that will have an impact. Some things I would be curious about, does the district have a technology plan. What does that plan include? Is assistive technology(AT) part of the plan? Sometimes by referring to the content of the plan is helpful.

IT people are sometimes wearing multiple hats (like many of us) and they are primarily working to keep the network up and running, so they lock it down so tight it prevents us from using many helpful items. One district's AT person worked closely with their IT people and was allowed to have a password so she could do what she needed to do on the computers. In some districts the AT person is now a member of the IT team so when they meet all issues can be discussed.

The other factor is how the district views the role of technology. Curriculum people offer workshops on different subjects (reading, writing, math, etc) but they don't included technology in their workshops. Teachers would have to go to a different workshop to learn computer applications. In one district that I worked with, the curriculum specialists are including technology use in their workshops. Teachers are seeing immediate application of technology as they are learning new strategies. What a novel approach, to demonstrate in teacher professional development, what we would like the teachers to be doing with students.

Scott

- **After 33 yrs.. in a Brick & Mortar School I am working in a Virtual Academy** posted by **K.Swanson** on Nov 06, 2007

I work for the Minnesota Virtual Academy, a public on-line school. I have a Minnesota license in Elem. Ed, LD, EBD, DCD and ASD. Starting my 4th year it has been a steep learning curve with technology and on-line tools. I am unable to find theorists, articles, journals or models for on-line material for social groups for the ASD population. I am working with Elluminate and blogs. Has anyone developed social skills over the internet. There is no face to face instruction. Any ideas?

- o **Re: After 33 yrs.. in a Brick & Mortar School I am working in a Virtual Academy** posted by **Bridget** on Nov 06, 2007

I used email conversations a lot when I worked in the Lakeville schools. It slows down social conversation and gave me the opportunity as a teacher to talk about initiating, topic maintenance, how to shift a conversation, closing or ending a conversation, etc. It was a non-threatening way to talk about such things because it was not face to face. This approach paired with other interventions such as small groups, social stories etc. made an impact in their ability to use more appropriate social skills. At the same time it worked on their writing skills. We introduced them to software like Co:Writer (word prediction) and talking word processors and also improved their written output. They also found themselves actually liking writing!!

We used a variety of different audiences for them to write to. They wrote to their parents, they each had an ebuddy (ebuddies.org) and they also used it to talk to their teacher and each other. We also used BLOGS. If they liked the topic my students with ASD wrote more. If they did not we have to bargain to get more participation but it also gave us an opportunity to talk about why we needed to know about things that were not interesting to them.

Continued good luck to you!!

- **Re: After 33 yrs.. in a Brick & Mortar School I am working in a Virtual Academy** posted by **David** on Nov 08, 2007
 What about Microsoft exchange or the virtual meeting room. Also a bit controversial but dare I say "second life"? set up your class. but I think that the virt. office with web cams ect.. I would stay away from places like skype though. Sounds interesting
 - **Re: After 33 yrs.. in a Brick & Mortar School I am working in a Virtual Academy** posted by **Paula** on Nov 09, 2007
 I am curious as to why you recommend staying away from Skype. We have been using a combination of these tools with the online courses that I supervise. We also use Elluminate and they are now offering a free year of Elluminate for K-12. They also have a Moodle plug-in which excites us as we use Moodle for our virtual platform.
 - **Re: After 33 yrs.. in a Brick & Mortar School I am working in a Virtual Academy** posted by **dave** on Nov 12, 2007
 Sorry so late in getting back :(skype has very little to no privacy security and has been listed as one of the most hackable programs. We were using it and found out the hard way.
- **Re: After 33 yrs.. in a Brick & Mortar School I am working in a Virtual Academy** posted by **Paula** on Nov 09, 2007
 We also use the chat feature within our online platforms. My online school is high school only. Within chat and the discussion forums we impose communication norms like normal conversation. We also discuss the use of emoticons and allow the students to create their own.

I am also a fan of Twitter/Snitter. I am not using it with students yet but...

- **Re: After 33 yrs.. in a Brick & Mortar School I am working in a Virtual Academy** posted by **Scott Marfilus** on Nov 17, 2007
 I had an opportunity to talk with a school in Canada that is just online. A combination of Middle and high School students with special education needs. However in the conversation they shared that a component of their program deals with social skills and interaction but they don't address it directly online. They take the areas that a student has strengths and skills in and will work to schedule them to participate in events. It may be that the parents are responsible for taking them to these events and the events aren't necessarily school led, they could be events in the community. For example, one student who's on the autism spectrum disorder goes to a local community building and participates in a swimming class each week. In other cases there may be a therapist that participates in that event.

I know you said your school was exclusively online, but I thought this was an interesting approach. They have been doing the online education for many years. They also use a few of the video conference tools to address some "face to face" contact.

- **Blog examples** posted by **Kirk Behnke** on Nov 07, 2007
 I'm looking for some good classroom examples of blogs to demonstrate writing representation. Please share any sites or examples for the use of blogs as a medium to demonstrate writing for our kids who happen to have disabilities. You may not even know if they do have disabilities (come to think of it).
 - **Re: Blog examples** posted by **Bridget** on Nov 13, 2007
 Here are a couple!! I hope you find beneficial!!

www.lakevillenorth.blogspot.com

Bridget

- **Re: Blog examples** posted by **Kirk Behnke** on Nov 14, 2007

Thanks for the links!

I really like the penpal idea and how it works with kids from other states.

I added this to my wiki page.

- **Re: Blog examples** posted by **Barb W.** on Nov 18, 2007

Our pen pals are actually college students who are studying to be teachers or speech and language pathologists. We use the blog as another way to get our students to experience "authentic" reading and writing. We do encourage our college pen pals to write on our blog in order to provide good language models for our students. We embed free technology into our blog such as video email (springdoo.com), Voicethread, Voki, Gabcast, instant messenger, and the YackPac walkie talkie. The use of StatCounter allows our students to learn geography and math. We are able to see where everyone lives who has visited our blog as well as statistics on how many people have visited it.

- **Podcasting** posted by **Julia** on Nov 08, 2007

I have heard a lot of talk about using iPods in the classroom and for educational purposes. I am new to the world of iPodding though. I was hoping to learn what is involved in creating podcasts? What technologies or equipment is needed to make this happen?

- **Re: Podcasting** posted by **Kirk Behnke** on Nov 08, 2007

Julia --

GREAT question!

A podcast is a subscription based content delivery system (broadcast). The content may be audio (podcast), video (vodcast), pictures, or a combination of the three (enhanced podcast). Content is delivered to an online "podcatcher" as soon as it is posted via a blog page. Content may be viewed on a portable device or on the computer... hence the name "podcast" for the iPod -- but you can use a generic MP3 player as well.

A podcast is similar to a radio show, that you can view online via a blogpage or you can download it onto your portable MP3 player to view when (and where) you want.

"RSS" is the subscription component of podcasts. This is what makes a podcast so great. Think of it like a magazine subscription. With a magazine subscription, you fill out a little postcard with your information and which magazines you want to subscribe to and they automatically come to your door. Otherwise, you would have to go to your local bookstore or newstand to obtain the latest magazine edition.

Just a like magazine subscription, you can subscribe to your favorite podcasts via RSS, that way, whenever you go to your podcatcher (i.e. iTunes, juice, etc.) these pocatchers will go to the corresponding blogpages to get the most recent broadcasts automatically delivered directly to you.

Okay, let's get to how we create a podcast in a few steps:

1. Create your audio content. You can use garage band by Apple or Audacity, which is a free software program that you download to make audio content.
2. Convert your audio content into an MP3 format. You can use Audacity to do this.
3. Publish it. This is how you get the word out that you have a podcast. We have a blog page that we put our podcasts on... go to

<http://txatconference2007.wordpress.com/> to see a listing of our Assistive

Technology Network podcasts from this summer's conferences.

4. Generate and publish your RRS or news feed. Most podcasters use blogging programs to generate these feeds, so this step will depend on which blogging service you use to host your podcasts.

A great example of podcasts in the classroom is Carrollton-Farmers Branch ISD. Click on their video on demand section of their web site to find out how they are incorporating technology for all students. <http://www.cfbisd.edu/>

Another example is Willowdale Elementary in Omaha, NE and their Radio WillowWeb -- podcasting for kids, by kids
<http://www.mpsomaha.org/willow/radio/index.html>

Lastly, Visual Learning Company has a series of science videos and podcasts that districts can buy to supplement their curriculum. Resource is below.

Resources and/or tutorials:

About.com article = <http://radio.about.com/od/podcastin1/a/aa030805a.htm>

PeachPit article = <http://www.peachpit.com/articles/article.aspx?p=413667&rl=1>

Apple Computer article =

<http://www.apple.com/education/digitalauthoring/podcasting.html>

Apple Podcasting in Education video series =

<http://www.apple.com/education/resources/podcastingvideos/video/video1.html>

Podcasting news = <http://www.podcastingnews.com/articles/How-to-Podcast.html>

Visual Learning Company = <http://www.visuallearningco.com/>

- o **Re: Podcasting** posted by **Brian Wojcik** on Nov 08, 2007
Kirk, thanks for such a wonderful explanation of podcasting!

I have, and continue to have, an interest in podcasting both as a means for professional development and for student engagement. I also really like what podcasting has to offer in the way of supporting diverse learners. Many of the students with whom I have worked have received benefits from information presented using more than one mode (e.g., visual, auditory, etc.). Podcasts can very easily put this multimedia information into the palm of any student.

A couple notes to add onto Kirk's message...

ANYONE (yes, I suppose I am really raising my voice about this) can make a podcast. The equipment and software is so readily available (and often free). Check out these resources:

Audacity - <http://audacity.sourceforge.net/> (Kirk mentioned this one but I thought I'd give the link...it's one of my favorites).

MyPodcast.com - <http://www.mypodcast.com/> (great online service for recording and publishing podcasts)

GabCast - <http://www.gabcast.com/> (allows recording through the phone or VOIP service like Skype - www.skype.com)

Of course, for more bells and whistles, one can always look at commercial podcasting products. One interesting one I have been looking at, though I do not have any

direct experience with it, is Tool Factory Podcasting (<http://www.toolfactory.com/products/page?id=2121>).

In looking at working with K-12 students and helping them develop their own podcasts, I highly recommend reviewing Tony Vincent's (the creator of Radio Willoweb that Kirk cited) site (<http://www.learninginhand.com/podcasting/index.html>) and pay special attention to the podcast segment guides which provide teachers and students ways to scaffold and organize a student lead podcast (<http://www.learninginhand.com/podcasting/RadioWillowWeb.pdf>)

Hope these resources help...

- o **Re: Podcasting** posted by **Scott Marfilus** on Nov 10, 2007
So Julia and others,
With the great resources that Kirk and Brian shared with us, did anyone create or look further into creating a podcast?

I played around a bit with my nephew and created one where he reviewed a book he was reading. He liked the fact that if he made a mistake he didn't have to start over at the beginning. We just edited those parts out later.

- **mobile learning** posted by **Chi Zhang** on Nov 08, 2007
Nowadays, many more people are talking about mobile learning. And also, there are many people and organizations doing research on it. Still, I think mobile learning is in its original stage. Most people may know how to design an application on the mobile device, but few person can figure out the characters about the m-learning users, how long they can focus on the subjects in the cell phone, what kind of materials are suitable for the mobile learning. As a new way of learning, which features make m-learning different from other kinds of learning, such as web-based learning or computer-based learning.
 - o **Re: mobile learning** posted by **Paula** on Nov 09, 2007
Hmmm what is the difference between Mobile learning and web based learning (today most of our handhelds are fully web accessible). Besides the obvious of size and portability of device - I believe the strategies for learning are the same. Maybe I do not know what mobile learning is??
 - **Re: mobile learning** posted by **Chi Zhang** on Nov 12, 2007
Maybe that is because I do not give a clear definition of mobile learning. I think that mobile learning is a kind of education that people use the mobile devices as the most important media which deliver the people with texts, animation, video and so on. In my mind, not like the web-based education where people are sitting in a room, the most important feature of the mobile learning is the mobility, it means that the users are moving when they are learning something. In this kind of situation, the learning process could be interrupted easily. That makes mobile learning much different from other kinds of learning. Hope more people can join in this discussion!!!!
- **Digital Natives...** posted by **Brian Wojcik** on Nov 08, 2007
A colleague of mine recently introduced me to a video made by students in college out in California. It provided a first person perspective about digital learning from digital natives. Here is the link (I apologize ahead of time that the movie is not captioned):

http://www.sfett.com/ican5/movies/digital_students.mov

After watching the movie, I was in awe and it really made me think. Granted, these were perspectives from university students but I can see application to K-12 education as well.

I'm curious what thoughts others have after watching this movie...

- o **Re: Digital Natives...** posted by **Scott Marfilus** on Nov 10, 2007
Brian,

It was a very interesting movie and great to receive the perspective of today's students. The students are obviously very comfortable with their technology and they know where it can take them in the future. This type of feedback makes the implementation of Universal design in education even more crucial. As educators we need to reflect on what we currently are doing and ask ourselves...is this meeting the student's needs...or do I need to make some changes.

- o **Re: Digital Natives...** posted by **Annie Czapp** on Nov 12, 2007
Brian, I really enjoyed this video. I definitely think that what these students said can be applied to K-12 education. I am currently working on my Masters degree in elementary education and for our research project we are looking at elementary students' perceptions of the use of technology in the classroom. The responses we have been getting from our kids have been overwhelmingly positive to using technology and a lot of what they are saying is along the same lines as the students in this video. As a digital native, myself, I think that technology does belong in the classroom - as long as it is implemented to meet the needs of the learners. I think that technology is great for differentiating instruction for different types of learners and learners who are at different levels. What I have noticed through my research on this subject is that even when the technology is available in schools it is not always being incorporated in a meaningful way, if at all. My question is, how do we encourage teachers to use technology in the classroom? I feel like the comfort level of teachers using technology needs to increase before we can see it being fully implemented in schools. I also feel that there are many teachers out there who have seen the wonderful possibilities of technology and have taken the time to learn how to use it and put it in their lessons, which is a great start!
 - **Re: Digital Natives...** posted by **Scott Marfilius** on Nov 17, 2007
Annie wrote "My question is, how do we encourage teachers to use technology in the classroom?"

You bring up a great question Annie, since we know some teachers have been taking the time to use technology and incorporate it into their lessons, but how do we make sure more teachers are heading in that direction.

The first thing that I see as a key factor deals with the role of administration and what they feel should be the role of technology in education. This has implication in numerous areas. Edyburn & Gardner talk about the Technology Integration Process and list these 4 phases. So you can see the impact that administration would have.

Technology Integration Process (Edyburn & Gardner, described in Lindsey)

PHASE 1 (Selecting) involves planning, locating, reviewing, deciding

PHASE 2 (Acquisition) involves previewing, evaluating, purchasing

PHASE 3 (Implementation) involves organizing, teacher training, student training

PHASE 4 (Integration) involves linking, managing, assessing, extending

Another model that I have seen schools use to assist teachers in using technology throughout the curriculum is the NTeQ (iNtegrating Technology for inQUIry) model. This model does not focus on the hardware as much as the process. As stated "The software is not as important as learning how to use the tool in a productive manner to learn core content and skills. The type and capability of the software you use in your classroom will most likely change, and some programs will be replaced by more powerful software in a year or two." The goal of this model is to create wise teachers who can facilitate

learning by managing the resources in the classroom.

There are 10 Steps to the NTeQ model which are:

1. Specify Objectives – Based on standards, benchmarks, and curriculum material.
2. Match Computer Functions – Identify and relationships between your objectives and the functions a computer can perform.
3. Specify the Problem – NTeQ lesson uses an inquiry or problem-based approach.
4. Data Manipulation – during the problem-solving process, the students gather data through observations or experimentation.
5. Results Presentation – How the students present their knowledge. Could be written, oral, newspaper, magazines, posters, Web pages.
6. Activities During Computer Use – Need to have clear expectations of how the students will use the technology.
7. Activities Before Computer Use – plan activities they need to complete to make the computer time efficient and effective.
8. Activities After Computer Use – Engage the students in reflective, higher-level thinking about the data they collected.
9. Supporting Activities – May be additional activities essential to the lesson but do not involve a computer.
10. Assessment – Given the variety of products and levels of learning, traditional paper and pencil test may not be adequate to assess the students learning.

So in summary

- * Teachers use their knowledge of student learning and technology to design, facilitate, and manage a student-centered, multidimensional learning environment.
- * The student is actively engaged in the learning process.
- * The student becomes technologically competent.
- * The role of the computer is integral in learning and it is a tool to be used in the learning process. It does not become a teacher.

You can read more about the NTeQ model at <http://nteq.com>

- **Minimizing Classroom Disruptions** posted by **Kirk Behnke** on Nov 14, 2007
eSchool News put together a compilation of past articles and stories surrounding "Minimizing Classroom Disruptions." Some of the topics include IT Security, professional development, cell phone usage in schools, social-networking sites, etc.

Here is their write up:

Computers and the internet have become welcome instructional tools in most schools, ushering a wealth of additional resources into today's classrooms. Unfortunately, they also bring with them the potential for unwanted distractions—such as online content that ranges from off-target, to inappropriate, material.

With the generous support of Faronics, a maker of solutions that help manage, simplify, and secure complex IT environments, we've assembled this collection of stories and columns from the eSchool News archives to help you leverage technology's potential for education, while minimizing classroom disruptions. We hope you'll find these resources helpful as you seek an appropriate balance in your own institutions.. --The Editors

http://www.eschoolnews.com/resources/reports/minimizing_classroom_disruptions/

I'm interested in hearing any responses you might have in regards to some of these articles.

- **Professional Development for the Digital Immigrants** posted by **Kirk Behnke** on Nov 15, 2007

At our Special Education Director's meeting, an interesting question arose that was mentioned in the expert perspective that I thought I would post to this discussion board... "What professional development strategies can help transition our digital-immigrant teaching staff to a digital-native classroom?"

An instant reaction is to make our digital-immigrants feel safe, first and foremost; otherwise further learning could be jeopardized. I think we need to build on successes - see what they are familiar with and work from there... if they are music buffs and not afraid of portable MP3 players, use this to work in podcasts. Another point would be to have them attend online workshops or webinars in their areas.

Any other suggestions?

- o **Re: Professional Development for the Digital Immigrants** posted by Rana on Nov 16, 2007

This issue touches a nerve with me. When I started teaching 3rd grade in a private school, I was the new kid on the block (plus I wasn't coming with a traditional teaching degree but rather with 10 years of experience in education technology.) The other teachers made it clear that their ways ruled the roost and every one of them was technophobic. There was a computer lab in the school, to which the kids were marched once a week for an hour. I was not impressed. I tried offering technology workshops after school; there wasn't a single taker. I made this offer throughout the year, and still no interest.

Every teacher had one computer in his or her classroom and not one of them was used for anything other than post-work reward, if that. I lobbied to get three computers in my class, so that I could at least pursue a "centers" approach, then invited teachers in to see my kids working on simulation software and other applications. Not only weren't they interested, they maintained I was jeopardizing performance on standardized tests by veering from the traditional worksheets.

What finally got their attention (but also their animosity) was when the kids in their classes talked to their parents and the parents started to ask why they weren't using the programs that my kids were. (Not all parents were pro-technology; some were definitely anti.) The parents must have spoken with the principal as well, because eventually a mandate came down that I was to conduct demonstrations during staff meetings. That eventually converted one or two of them, but there was no love lost when I left to teach in the public school system.

Here there are quite a few teachers who feel comfortable with handhelds, but kids aren't allowed to bring in their own (theft issues) and the school doesn't have the budget to issue class sets. The computer lab model still holds, although I have easier access to a range of approved PC-based programs. Unfortunately, they're still seen as adjuncts to the curriculum, not core teaching tools. The best luck I've had encouraging teachers to pursue tech training has actually been with the Family Center institutes, because everyone here needs CEU's and it's so easy to participate from home in your pj's.

Sorry for the rant. I know there are lots of tech-savvy teachers out there doing great things (and I like reading about them because it makes me feel less isolated) but my own experience has been frustrating. The potential of edtech for all students, with and without disabilities, is so huge and so obvious but we're so very far from realizing it.

- **Re: Professional Development for the Digital Immigrants** posted by Jennifer on Nov 16, 2007

Rana, I feel your pain.

I'm a Tech Specialist in one of those computer labs you write about. Getting teachers to come to tech trainings is really a challenge. There's a lot of competition with other trainings, especially in the past few years with all the new standards-based testing tools.

I find that offering food helps. The better and more plentiful the food, the better the attendance. Last year I asked our PTA for money to buy t-shirts. Not only were they a bribe to come to the workshop, but I had basic instructions for the presentation app that I was teaching printed on the back. Too late someone pointed out to me that I should have had them printed on the front, upside down, so that teachers could read them while wearing them. Oh well, maybe the PTA will give me more money this year!

- **Re: Professional Development for the Digital Immigrants** posted by **Scott Marfilius** on Nov 17, 2007

I had posted a description of a technology integration model that some schools have used under another thread called Digital Native, so I won't repost it. But I would like to add that I see the most effective professional development happening when the technology component is not totally separate from other professional development trainings in the district. Districts that incorporate technology and model/demonstrate it's use in all content areas helps prevent teachers from viewing technology as a separate thing.

- **symbol based writing for the PDA** posted by **WL** on Nov 16, 2007
During last month's institute, someone asked if there was a symbol communication software database, such as Boardmaker, that could be loaded on a PDA. There was a mention of some research in Japan, but otherwise no one knew of anything. I was interested in this question and wondered if either of you are aware of something that fits this bill. Thanks.
- **Discussion will end early** posted by **Jackie Hess** on Nov 23, 2007
Due to a lack of posts, we've decided to end this discussion early. We hope you'll join us for an upcoming forum.

Resources

ARTICLES

Taking Computers Out of the Corner: Making Technology Work in the Classroom

By: Melanie Kuhn

This article discusses the importance of not having classroom computers sit idly in the corner. Kuhn offers ways to make them accessible to all students so that they can be used across the curriculum.

<http://www.readingonline.org/electronic/kuhn/index.html>

Digital Natives, Digital Immigrants

By Marc Prensky

This 2001 article looks at how students in today's school system are digital natives, from pre-school to the university level. They also discuss digital immigrants, people who have learned technology in recent years, and who are not as familiar as current students. Prensky looks at the impact of the gap between digital natives and digital immigrants on the education system.

<http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>

An Educator's Guide to Making Textbooks Accessible and Usable for Students with Learning Disabilities

This article, from the Center for Applied Special Technology and LD Online looks at how you need to provide a variety of learning materials for students so that they can learn in the way in which they are most comfortable. This includes making textbooks accessible in multiple formats. The article explores the potential of e-text, with recommendations for finding accessible texts and for making your own using scanners. It is a good introductory resource for making textbooks accessible.

<http://www.ldonline.org/article/16310>

Assistive Technology and Learning Disabilities

By: Janet Jendron, South Carolina Assistive Technology Program

This article discusses the various hardware, software and low-tech tools for students and teachers with a focus on literacy. It also identifies a couple of math tools.

<http://www.sc.edu/scatp/ld.htm>

Handhelds and Special Needs Students

By: Karen Vitek

This article, written from a first-person perspective, looks at how technology has helped students over the years. The specific focus of the article is handheld devices. Vitek discusses the various ways handhelds can be used across the curriculum.

<http://www.techlearning.com/story/showArticle.php?articleID=45400052>

I've Got a Palm in my Pocket: Using Handheld Computers in an Inclusive Classroom

By: Anne M. Bauer and Mary C. Ulrich

This 2002 article from *Teaching Exceptional Children* discusses the use of handheld computers in the classroom. The authors note students' familiarity with the devices, which makes it easier to incorporate them in instruction. The article provides both student and parent perspectives, examines relevant literature, and suggests ways that handheld computers can be used in the classroom.

http://www.teachingld.org/pdf/teaching_how-tos/article_2.pdf

On the Go: What Consumer Products Can Do For You (If You Know Where to Look!)

By: National Center for Technology Innovation and Center for Implementing Technology in Education.

This 2006 article shows how everyday pieces of technology can be used to help students with disabilities. The article looks at the following technologies: PDAs and Smartphones, cellular phones, and iPods. They also provide additional resources for each of these types of tools. It is a simple guide and easy to understand.

<http://www.ldonline.org/article/9705>

Interactive Whiteboards: Assistive Technology for Every Classroom

By: Alfred N. Basilicato

This article discusses how interactive whiteboards, which are becoming common in classrooms across America, can reach all learners and aid in inclusion.

<http://www.numonics.com/pressRelease/AssistiveTech.pdf>

Using a PDA in Today's Classroom

By: Chauncey Rucker

This article from ConnSense looks not only at PDAs in the classroom, but also discusses the portable notetaker, Alphasmart, and the Dana. The author lists a variety of software, freeware, and features that he believes make the PDA a very good piece of equipment for the classroom.

<http://www.connsensebulletin.com/danctg.html>

Using Flexible Technology to Meet the Needs of Diverse Learners: What Teachers Can Do

By: Lisa Wahl and Julie Duffiels

This article, from WestEd, looks at ways teachers can use technology, including: classroom computers, graphic organizers, Internet resources, and readily available software such as Microsoft Word and Kid Pix, to assure that diverse learners are successful in the general education curriculum. The authors also provide tips to help schools and districts support the use of technology.

http://www.wested.org/online_pubs/kn-05-01.pdf

It's About T.I.M.E.! (Technology Improving the Methods of Education

By: Willie Ennis, III and Shannon Mocanu

This article from Tech Learning describes research that supports technology integration as a way to improve student outcomes. Research studies are cited indicating that technology-enriched classrooms improve higher order thinking and social skills.

<http://www.techlearning.com/shared/printableArticle.php?articleID=18902862>

Success for All Students: Leaving No Child Behind in the Digital Age

By: Cindy L. Richardson

This article discusses the importance of technology in meeting the needs of diverse learners. It provides tips for educators in using tech tools for large group instruction, small group instruction, and for individual learning and practice.

<http://web.wm.edu/ttac/text/articles/assistivetech/nclbdigital.html>

iPod Helps Special Needs Students Make the Grade

This resource profiles an Iowa elementary school that is using iPods as part of their assistive technology program. For educators looking to use iPods or other mobile technology in the classroom, the article provides valuable policy advice and several related resources.

<http://www.apple.com/education/profiles/louisamuscatine/>

Technology – The Great Equalizer

This article, from the Council for Exceptional Children, talks about the possibilities that technology (both instructional and assistive) offers students with disabilities to “level the playing field.” The article looks at the difference between instructional and assistive technologies and discusses these in relation to various curricular subjects taught. It maintains that technology can help meet the needs of all learners, not just those with disabilities.

<http://www.cec.sped.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=6263>

Literal Systems

LiteralSystems.org is an organization that produces free audio files of books, prose, and poetry that enable users to hear text read aloud. It concentrates on the classics and has about 35 completed classics and works of poetry. The audio files can be downloaded to a computer, iPod or other digital audio device. The downloads are free and a great resource.

<http://literalsystems.org/abooks/index.php>

Virtual Reality World Teaches Deaf Children Math Skills

By: Jim Schenke

At Purdue University, the Envision Center for Data Perceptualization is making use of virtual reality technology to allow children who are deaf to explore and learn from their environment as do typically developing children. Through the use of hand and body movements, students are able to control their environment, engage in learning activities at their own pace, repeat activities as needed, feel or see items or processes in concrete terms, practice daily living activities in a safe environment and develop motivation to succeed.

<http://www.purdue.edu/UNS/html4ever/2006/060724.Villani.dentedcan.html>

The Future is Now: Where Today's Assistive Technologies Will Take Learners Tomorrow

By: Pamela Wheaton Shorr

This article examines the use of emerging technologies, including wearable technology, the use of brain waves to re-program behavior, and virtual reality.

http://www.ciconline.org/c/document_library/get_file?folderId=30&name=T-Win05-FutureIsNow.pdf

WEBSITES

AccessIT

AccessIT promotes the use of electronic and information technology for students and employees with disabilities in educational institutions at all academic levels. The website features the AccessIT Knowledge Base, a searchable database of questions and answers regarding accessible electronic and information technology. It is designed for educators, policy makers, librarians, technical support staff, and students and employees with disabilities and their advocates.

<http://www.washington.edu/accessit/>

CAST: Universal Design for Learning

This website is a key resource for those interested in universal design for learning. UDL principles include: 1) Presenting information and content in different ways; 2) Differentiating the ways that students can express what they know and 3) Stimulating interest and motivation for learning. Clearly technology offers options for addressing each of these principles.

<http://www.cast.org/>

Learning Point Associates: Technology Research

This link provides access to summaries of research that has been conducted to evaluate student outcomes when technology-based interventions have been implemented.

<http://www.learningpt.org/page.php?pageID=85>

Classroom Technology News and Publications

Buzzle.com - 2006

This website contains a comprehensive listing of educational technology-focused articles and publications.

http://www.buzzle.com/chapters/education-and-higher-learning_classroom-networks-and-technology_news-and-publications.asp

FACT SHEETS

Freeware, Shareware and Demo Programs on the Internet

This fact sheet, from the ConnSENSE Bulletin, lists freeware and shareware that can be obtained via the Internet in the following categories: cursors, demos, drawing, coloring and creating programs, educational games and programs, e-text, graphics, graphic organizers, internet sites, keyboarding, math support, modification checklists, mouse skills, on-screen keyboards, sign language, symbol support, text-to-speech, tools and visual support.

<http://www.connsensebulletin.com/freeware05.pdf>

GUIDES

Using Accessible Technology: A Guide for Educators

Microsoft Press - 2005

This 47-page guide provides information about accessible technology initiatives and resources that are available to educators. The guide includes:

- A discussion of the importance of accessible technology.

- Case studies that describe accessible technology initiatives.
- Information about accessibility features and assistive technology products that will help individuals with specific disabilities.

<http://www.microsoft.com/enable/education/guide.aspx>