

Writing Tools for Differentiating Instruction

By Kylie Stewart, Diana Greer,
and Sean J. Smith

Educators seek to meet the needs of all their students. The reauthorization of the Individuals with Disabilities Act in 2004 along with the No Child Left Behind Act of 2001 upholds legislative mandates calling for an inclusive approach to education and increases the diversity of needs in the classroom. Universal Design for Learning (UDL) principles supported by technology provide the flexibility necessary for helping all students learn.

Universal Design for Learning

The concept of UDL calls for multiple ways to deliver content and demonstrate mastery as well as breaking down of complex tasks into simpler ones. Technology supports UDL in three major ways.

1. Technology can provide educators with additional means to relay information based on reading levels, learning preferences, and special needs.
2. Technology can provide students with additional ways to articulate what they have learned and thus

provide the flexibility necessary to determine the effectiveness of educational instruction.

3. Technology can help educators keep students engaged in the learning process while at the same time giving educators ways to provide individualized instruction.

There are many tools on the market today that assist teachers in incorporating UDL principles in their classroom. Many focus on the writing process, including brainstorming, planning, organizing, and developing written language skills. We have selected products that highlight ways to integrate technology solutions based on UDL concepts into the lives of all learners.

Inspiration

Inspiration integrates visual learning into the written language process. Developed to assist in the prewriting and writing process, Inspiration allows students to brainstorm and develop their ideas through a graphical approach. Students use the graphics to identify topics and subtopics, manipulating ideas in an interactive format while making connections in their planning. Once students have created a graphical/visual representation of their thoughts, the UDL interface allows individuals to switch from the graphic to an outline format to expand ideas into written material. As a result, students generate ideas in a visual “hands-on” manner that is easily translated to the traditional written structure.

Draft:Builder

We know struggling writers spend much less time strategically planning

and organizing their ideas than proficient writers. To develop prewriting strategies, Don Johnston developed Draft:Builder to assist students in the planning, organizing, and drafting of written material. Similar to Inspiration, the tool provides students with a strategic UDL-based approach by breaking down the writing process into small, manageable portions. These manageable portions allow the students to stay on task and build effective writing strategies. Draft:Builder incorporates the principles of UDL by allowing students to use the software in multiple ways, matching students’ learning style to their writing. The software also features various premade templates addressing a wide range of genres so that students can apply Draft:Builder across content areas.

Co:Writer

Co:Writer, also from Don Johnston, is a word prediction and vocabulary building tool that supports students as they write by offering prompts and word predictions to words they often have difficulty spelling. For example, the Linguistic Word Predication intelligence interprets what the student is typing whether he/she is a phonetic speller or just needs support in the spelling process. Through this process, a student receives a possible list of words after every letter is typed. With this feature, students can individualize their supports based on need and progress made in their writing. Likewise, the eWord Bank and Topic Dictionary target words from across curriculum areas, making the software applicable across a variety of subjects.

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Don Johnston Solo Products

students have pasted the text into the document, they can also save it to go back to and listen at any time. This tool has been used successfully with students who need support when independently editing and revising their work. Students can listen to their written products for word and punctuation omissions and listen to the structure and content of the sentences.

ReadPlease Plus extends the features of the free tool by highlighting the text while it is read, providing a dock at the top of the screen, and compatibility with AT&T voices. The dock, which attaches to the top of your screen, acts like a task bar allowing students to use the software while they are in other programs such as Microsoft Word or Internet Explorer. For \$30, schools can purchase ReadPlease Plus for one computer, extending the text-to-speech capabilities.

Microsoft Narrator/Mac OS

Text-to-speech is also available on either the Windows or Mac operating system. For example, most schools today have Microsoft accessibility tools on their computers. Microsoft Narrator is a new tool that comes with the Office 2004 suite. The purpose of Narrator is to increase the accessibility of the computer for individuals with visual impairments, but it can also serve to increase all students' writing skills.

Narrator reads active windows, menu options, and text that has been typed. The text-to-speech tool will read text that is typed in a variety of programs, including Wordpad, Notepad, and Internet Explorer. Therefore, students can realize the same advantages that ReadPlease offers within their own computer without any additional software. Likewise, for Mac users, OS 9 and OS X offer text-to-speech options, speaking text in TextEdit and Safari. Furthermore, OS X offers accessibility features similar

Write:OutLoud

Write:OutLoud expands student support by providing audio output for each letter and word the student types. This UDL support seeks to foster independence in the writing process. Similarly, the Franklin Spell Checker reads vocabulary definitions to enhance student understanding, and thus effectively helps students check their work for spelling errors independently. Self-assessment skills are also increased as students monitor their own writing by listening to their writing products. Many states are now allowing Write:OutLoud to be used during state assessments as a viable accommodation for students with disabilities. Teachers also prefer using this software because it will automatically monitor word count, sentence length, word choice, and a whole host of additional data as students write. This data can be used to evaluate student progress, identify individual goals, and communicate to parents through progress charts.

Speech Synthesis

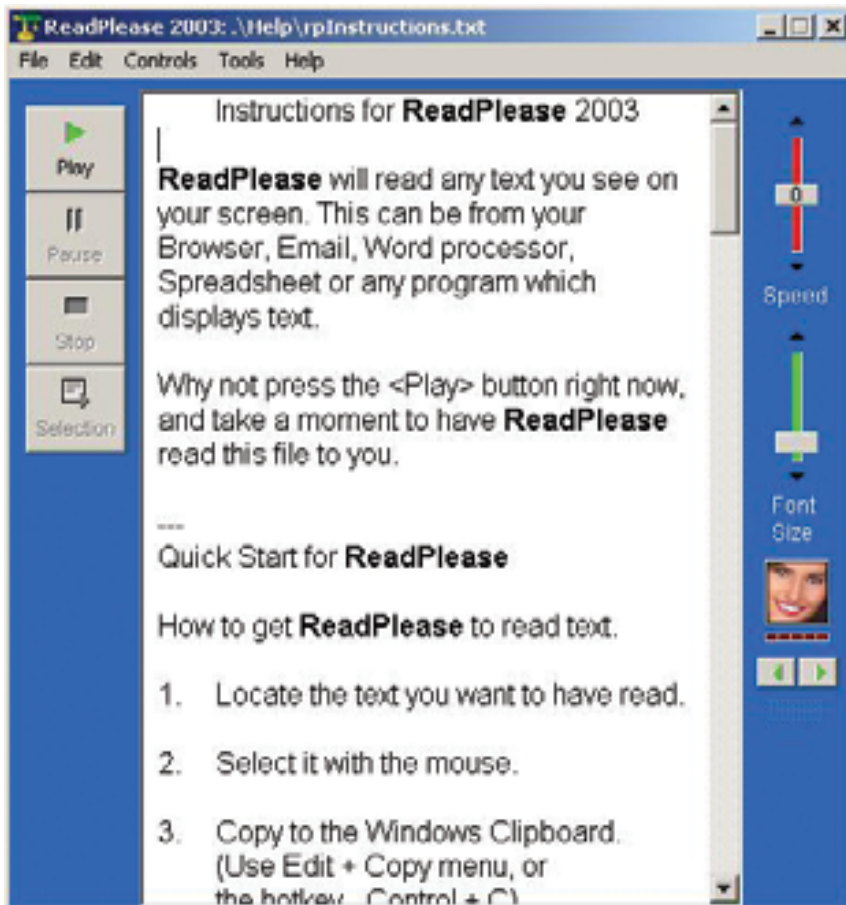
Speech synthesis (such as the feature available in Write:OutLoud)—or text-to-speech, as it is more commonly known—can be a cost-effective support as well as universal feature for students who struggle with the writing process. Speech synthesizers can speak the letters, numbers, punctuation marks, and words from the

computer screen, offering several advantages to students who need written language support.

First, speech synthesis makes a connection between the visual and auditory representation of words. Students have a visual image of the word as they are hearing the pronunciation. This can improve both writing and reading skills of students. Additionally, speech synthesizers foster independence in the writing process as students take more ownership in editing and revising their written work independently. As a result, the mechanics of writing are improved, and findings (MacArthur, 1998) indicate the quality and quantity of writing improves when the learner can hear what he/she has constructed. We discuss one product on the market today that is cost effective as well as briefly describe two internal applications available in the Windows and Mac operating systems.

ReadPlease 2003

ReadPlease 2003 is a free text-to-speech tool that can be downloaded and used on any Windows operating system. The software allows students to copy and paste any text into a reader that then reads the text to the student through a variety of options. Students can select male or female voices, adjust the speed of the speech, and enlarge the text. Students can also start the reader at any location in the text. Once



ReadPlease Screen

to those available in Windows XP and Office 2004. Regardless of the operating system, text-to-speech capability is increasingly integrated for all students to use, thus enhancing student independence in the writing process.

Call for Curriculum Submissions

Have you or a colleague taught a lesson or unit integrating technology that went particularly well?

Do you have:

- Tips, tricks, or tidbits?
- Stories or quotes that demonstrate student learning?
- A great tech tool or resource?
- Quick ideas easily adapted to other settings or content areas?

If you answered **yes** to any one of these, please contact the editor with your ideas:

Kate Conley • kconley@iste.org
1.541.434.8926

Future Directions

The future is bright for students who struggle with written language. As the marketplace continues to develop applications that integrate UDL principles, all students will benefit. In the area of writing, future software products will only serve to reduce the gap in written language among students by providing truly individualized support in any setting.

Similarly, hardware options increasingly enhance tool integration, making software more accessible across the general education setting. For instance, AlphaSmart and other portable keyboard or notetaking devices offer cost-effective alternatives to the laptop. These devices are lightweight, rugged, and have extensive battery lives. AlphaSmart's Neo and Dana even operate Write:OutLoud, Inspiration, and Palm OS applications and connect wirelessly to school networks. With these UDL-designed supports,

students can easily complete written language assignments, connect to the school's intranet or Internet, and/or download text to other computers or printers to complete an assignment. Likewise, speech-to-text advancements will further enhance independence in the writing process.

With operating system upgrades and similar solution advancements continuously expanding speech solution options, technologies such as dedicated word processors, playback modes, and text-to-speech tools will further foster student learning.

Resources

- AlphaSmart: <http://www.alphasmart.com>
Center for Applied Special Technology (CAST): <http://www.cast.org>
Inspiration: <http://www.inspiration.com>
MacArthur, C. A. (1998). From illegible to understandable: How word recognitions and speech synthesis can help. *Teaching Exceptional Children*, 30, 66-71.
Microsoft Accessibility: <http://www.microsoft.com/enable>
ReadPlease: <http://www.readplease.com>
Solo: <http://www.donjohnston.com>



Kylie Stewart is a PhD student at the University of Kansas in special education. She has taught at the K-8 level and worked as an assistive technology coordinator in metropolitan school districts. Scott's current research focuses on Web-based solutions to meet NCLB requirements and assistive technology for students with high incidence disabilities.



Diana Greer is a PhD student at the University of Kansas in special education. She works as a school psychologist in a metropolitan school. Greer's current research focuses on Web-based solutions to meet NCLB requirements and technology integration into the classroom for students with high incidence disabilities.



Sean J. Smith is an associate professor at the University of Kansas in the Department of Special Education. Smith has extensively researched and published in the areas of high incidence disabilities, online learning, teacher preparation, and technology for students with disabilities.

Get Ready to Read

Early uses of the Internet focused on finding information. Today's teachers want to use the information for teaching and learning. With the click of a mouse, teachers and students can tap into a world of social studies information available on the Internet by simply typing key words into a search engine. The challenge of going beyond finding useful information to promoting meaningful learning can be encouraged with reading strategies that help students to develop skills in understanding expository texts available on the Internet. Anticipation guides help students get ready to read Internet information.

Developed by J. E. Readance in 1986, anticipation guides are used by many teachers as a way to help students connect new information to prior knowledge. Prior to reading Internet information in a social studies lesson, anticipation guides can be used as prereading strategy to help students connect to prior learning or to examine ideas about a topic. By developing a list of true/false statements designed to connect to previously learned information, teachers can focus student attention during Internet research. Anticipation guides help students to consider the "big ideas" that will be revealed in the text.

Using anticipation guides to help students focus on key social studies ideas is a powerful cognitive strategy. Choose topics that help students to check their understanding of key concepts while extending learning. Information on social studies topics such as global warm-

ing, world news, immigration, and world cultures provide fertile avenues for connecting to prior knowledge and encouraging active learning in social studies class.

Here are three sites that we have found useful in my social studies methods class.

<http://www.epa.gov/globalwarming/kids/>
This Environmental Protection Agency Web site provides useful information for students to develop an understanding of global warming. Because this topic holds some disagreement among the science community, teachers need to select resources such as the EPA site to acquire relevant and politically neutral sources for information.

<http://www.timeforkids.com/>
Published by *Time* magazine, Time for Kids is an outstanding source for age-appropriate current events information. This printable information is a perfect resource for developing meaningful understanding of timely topics.

<http://www.cia.gov/cia/publications/factbook/>
For older students, the CIA World Factbook is useful for examining preconceived notions about different countries in the world.

Using Anticipation Guides with Internet Resources

Teachers: Steps one and two should be done prior to the lesson.

Step 1: Identify Big Ideas. Select the Web site that you want your students to use to connect to expository information. As you read the information, make a list of the key ideas that you want students to recognize from the text. Use the key ideas to develop true/false statements about the text. Good examples of anticipation guides can be found at

Read, Write, Think (<http://www.readwritethink.org>).

Step 2: Construct the Anticipation Guide. Write four to six statements that can be learned from reading the information available at the Internet Web site. These statements may support or challenge students' beliefs about the topic. Some statements should be true and some should be false. Following each statement, include two columns that are labeled *Agree* or *Disagree*. There should be two sets of columns—one before students read the information and one after they read. Construction of the anticipation guide can be as simple or elaborate as you choose to make it. You can use word processing to make a simple list or a more elaborate table.

Step 3: Demonstrate and Discuss. Share the guide with students by modeling the first statement. Read the statement and ask the students if they agree or disagree with it. Provide the opportunity for students to defend their opinion.

Step 4: Read the Internet Information. Students need to access the information by locating the Web site to read and find evidence to support or disprove their original responses.

Step 5: Revisit Your Opinions. After reading the Internet information, students will confirm or revise their earlier responses on the anticipation guide.

Effective classroom teachers know that connecting to prior knowledge is one of the most important things that we do with students throughout the school day. Finding ways to make connections with information available on the Internet can be achieved with anticipation guides.

Judy Britt teaches social studies methods to elementary education majors at Eastern Kentucky University.

By Judy Britt

Creating Magical Multimedia Projects

It is not always easy to design meaningful multimedia project-based assignments for your students. Not only must you have a thorough understanding of the content and standards that your project will address, but you must also have an understanding of the technology and what makes a good multimedia project. Having taught several graduate courses involving the creation of multimedia student projects, I have found useful the components outlined in the book *Increasing Student Learning through Multimedia Projects* by Michael Simkins, Karen Cole, Fern Tavalin, and Barbara Means. This book is based on a five-year effort, the Challenge 2000 Multimedia Project, which received original funding from the U.S. Department of Education. The evaluation of this project, along with several other recent studies, supports the use of multimedia project-based learning in education. Researchers have found student benefits to include decreased absenteeism, increased engagement, increases in cooperative learning skills, and improved test scores. Find more information about these research studies at the George Lucas Educational Foundation Web site (<http://www.edutopia.org/modules/modarticle.php?id=art887&mod=pbl>).

The seven key dimensions of a good multimedia project-based assignment as outlined in Simkins et al.'s book are summarized below.

1. *Curriculum*—Your project should be based on grade-level standards, and often-times it can be designed cross-curricular.

2. *Extended timeframe*—Your project should extend over time to give students the opportunity to research their topic and a chance to reflect and make revisions.

3. *Student decision making*—Look at your project closely and see where student decision making can be expanded. When students have a say in some of the decision making of a project they feel ownership of the project and usually work harder.

4. *Collaboration*—Incorporating partners, teams, or whole class participation will help students develop skills in working with others and communicating their thoughts and ideas.

5. *Assessment*—Students should have a clear understanding of what is expected of them. Rubrics are most often used to evaluate multimedia projects, and students can play a part in creating them.

6. *Real-world connection*—If the project relates to the lives of your students, it will be more meaningful and motivating to them. The project could be about issues related to the school, community, state, country, or world. The main thing is that the students see a reason for doing the project.

7. *Multimedia*—The product your students create should be a multimedia product, which could be video, a slide

show, or a Web site. You will need to look at the resources available at your school, as well as the skill level of yourself and your students.

After reviewing the seven components of a well-designed multimedia project, the teachers in Donna's course come up with a project idea. She asks them what multimedia product their students could produce that would tie in with their grade level standards. Once a decision is made about their project idea, they write up a project summary or abstract that is shared in a small group. Here, each teacher's project is reviewed and evaluated, based on the seven key dimensions. Positive criticism, suggestions, and new ideas are shared. For example, one high school geometry teacher realized her project idea involving a student-created geometry dictionary with digital images of real-world objects demonstrating geometric properties was really a multidisciplinary project that incorporated not only math, but art and language arts as well.

After each teacher receives input and feedback from others in their group, they write up their multimedia project plan, which includes objectives, content standards, technology standards, project description, learning strategy and time line, and assessment.

A high school algebra teacher, who originally thought that the project might take up too much class time, reported that her students retained information better while



By Donna Dick and Jennifer Lindeman

Multidisciplinary

participating in her multimedia project, titled “The ABCs of Mathematics.” Through this year-long partner project, her students used PowerPoint to create a slide for each letter of the alphabet, defining in their own words algebraic terms, constructing appropriate types of graphs, and designing appropriate questions and answers. The teacher also noticed that through participation in this project, her students turned into “little teachers,” as they frequently took time to explain a term to a classmate who was struggling with a topic.

Another elementary teacher commented that she noticed her students’ motivation increased while they were participating in a multimedia project titled “All about Me.” In this project, her students created a slide show highlighting their likes and dislikes and included digital images and a video clip.

Knowing the qualities of what makes a good multimedia project will help you to develop ones that motivate and engage your students. When you have a project idea, evaluate it based on these seven key dimensions to see if it follows these guidelines or if it could be improved in some way. As your students begin their projects, keep your eyes and ears open, and you just might see some magic happening right in your classroom!

Donna Dick is an educational technology specialist with the Northwest Ohio Educational Technology Foundation. She also has adjunct faculty status with Bowling Green University, and has taught several graduate-level courses with an emphasis on technology integration.

Jennifer Lindeman is a mathematics teacher at Ridgedale Junior/Senior High School in Morral, Ohio. She holds a bachelor of science in adolescent/young adult and integrated mathematics from the University of Findlay and is currently working on her master’s in classroom technology at Bowling Green State University.

Encouraging Graphing with Sports

As I work with teachers to lead and assist in the computer lab with students, I have found that spreadsheet programs—specifically Excel—are one of the toughest programs to get teachers to use, not only with students, but also on their own. It is hard for many teachers to get past the mindset that using a spreadsheet is going to mean using and understanding formulas.

With March Madness here in basketball-crazy New Castle, Indiana, I found a great way to get students, and even teachers, interested in using Excel and creating a graph. For many teachers, it was their first experience using a spreadsheet program, and it has helped them to see that spreadsheets have many uses and can be adapted to fit many topics.

Our high school boys’ basketball team won the Class 3A State Championship on March 25, 2006. The previous weekend, New Castle had won the Semi-State Championship. I thought this was a perfect opportunity to generate some enthusiasm for spreadsheets.

I targeted a few of our third grade classes to introduce this lesson. When introducing Excel to students, I always ask how many know how to play the game Battleship, and nearly all hands go up. I explain to them that spreadsheets use the same layout when working with cells. For the students who are not familiar with Battleship, I explain by showing the students how the spreadsheet is really a grid and each cell is a location. Clicking on a cell highlights the column and row indicators. Then, when asked to identify which cell I was on, all students could name the cell location.

I listed the names of the boys who scored in that Semi-State game along with their number of points scored. The students created a very simple spreadsheet with this information.

Then we were ready to create a chart. Explaining how to highlight and select by drag and drop didn’t present as much of a problem as I had expected. Once they understood that in Excel you must have the “big white plus sign” before you can drag, the students had no problems in selecting their range of cells.

Using the Chart Wizard in Excel, students created a bar graph. I then showed students how to color the individual columns and backgrounds, and change to different types of charts. Many of the students were already familiar with using fill colors and fill effects from PowerPoint projects that they had worked on, so there were a lot of creative charts. And there were a lot of variations of kelly green and white, the New Castle school colors.

After the classroom teachers saw how quickly the students understood how to use Excel in this simple form, the teachers quickly thought of other uses—having students create a spreadsheet and graph of math and reading scores, results of measuring kilograms of classroom items, creating surveys, and charting weather and temperatures.

And that included, of course, creating a new spreadsheet and graph with the points scored by our state champs! Not only did the students learn that graphs could be fun, they learned that using spreadsheets and creating graphs is not limited to formulas. It is a great way to show a visual representation of the many types of data collected and make an easier comparison of the information. Students also learned that the same data can be presented in different ways to highlight a different viewpoint.

—Theresa J. Pierce, Technology Associate & M.O.S. Master Instructor, New Castle Community School Corporation, Technology Center, New Castle, Indiana

Mathematics

Quality Images for the Classroom

As teachers continue to use multimedia options to communicate with students, parents, colleagues, and community members, they are faced with the challenges of a graphic designer. Not only must we learn how to create Web sites, newsletters, and DVDs that are aesthetically pleasing, but the visual elements included in these products must not be used illegally. That is, we must be sure that the clipart and photos used in our multimedia creations are royalty free and that we have permission to use these items under the terms of use specified.

Although it is relatively easy to do an image search in Google (<http://images.google.com>) or other popular search engines, locating an image does not mean that we can use that image without penalty. Only if the owner of the image gives permission for the work to be copied and used can we legally (and ethically) include it in a product, even if that product is a presentation done within our classroom walls. Of course, some would argue that as educators we have some umbrellas of protection, and if we are not profiting from the use of the images and are using them for educational purposes, then we are safe. A word of caution: Unless you know whose work you are commandeering, never assume that they will not sue.

In this light, what is a classroom teacher to do? Designing visually appealing Web sites, presentations, newsletters, CD-ROMs, and DVDs requires access to good clipart and photographs. How can such material be acquired in an inexpensive and legal way?

Royalty Free vs. Totally Free

There are many places that contain large, searchable databases of photos

and clipart that are royalty free. However, just because the items are royalty free—meaning that you have permission to use them without paying a fee to the creator—does not mean that these images are totally free. Many have fees attached, whether on a per item or subscription basis. If money is not required for permission to use the media, vendors and artists may still require that you credit them in your products, noting their names and other contact information. Neglecting to follow these “terms of use” puts you in violation of the royalty-free protocol, so users should always be careful to read and follow the terms of use carefully.

Finding Good Stuff

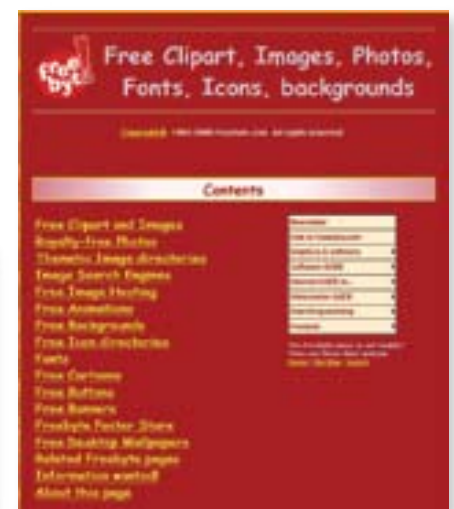
Clipart. The good news is that there are many places that offer clipart and digital image acquisition at no-cost or low-cost terms. Discovery School's Clipart Gallery (<http://school.discovery.com/clipart/>) allows a user to use up to 10 images before requesting a license. Once a license is requested, an option to charge for additional items is established. Other terms of using the clipart files include not editing the images and including Discovery-school.com's link on the Web site or product using the image.

Clipart.com (<http://www.clipart.com/en/>) provides collections that can be purchased on a subscription basis, beginning at \$15.95 for a week of use. This type of access might be of interest to teachers who anticipate their digital



image needs for an entire semester or year, and spend one week in the summer acquiring these files.

Freebyte (http://www.freebyte.com/clipart_images_photos_icons/) provides a directory of clipart distributors, many of which include no-cost pictures. One such site is Barry's Clipart (<http://www.barrysclipart.com>). This collection is quite extensive, including not only clipart, but digital images, animations, video and sound files, and music. All of these items are copyrighted, but are owned by Jupitermedia, the entity allowing the use. The lengthy “terms of use” statement clearly prohibits any use other than the downloader's personal use. The statement “You may not use photos or images of people or identifiable entities in any manner that suggests the endorsement or association of any product or service or in connection with any pornographic or immoral materials” demonstrates the compa-



By Savilla Banister

Multidisciplinary



The Future

Brought To You
By Inspiration
—And Coffee



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ny's intent to be sure their media is used in morally acceptable venues.

Photographs. Locating quality digital photographs is also easily done on the Web, but sometimes items have a price attached. Getty Images (<http://creative.gettyimages.com>) has an excellent collection, but some images may cost up to \$50. There are many available for \$1, and at that price, educators may sometimes be willing to pay for such quality. Fotosearch (<http://www.fotosearch.com>) provides a directory for digital photos from a variety of sources, including Getty, Stockbyte, and Stockdisc.

iStock Photo (<http://www.istockphoto.com>) is a favorite of National Association of Photoshop Professionals members and provides excellent Web-ready images for \$1. iStock membership is free, and a free image download is provided each week, allowing teachers to build up a collection of images that they can safely use.

Remember Resolution

A word of caution when acquiring digital images: Determine what your needs are before choosing an image size. For Web use, a 72 ppi (pixels per inch) at 100% will work well. However, this same image, if stretched beyond its 100% capacity or used in a printed document, may be blurry or "pixilated." If you plan to use an image in multiple venues (print, Web, etc.) it is wise to get a high resolution image (200–300 ppi) that you can resize when you need less digital information (such as in Web publishing).

Other Options

If paying for clipart and digital images does not sound compelling, you still have options in acquiring quality multimedia for your classroom. First, you might consider sharing subscriptions or purchased image collections within your school or district. This type of distribution is allowed under some terms-of-use statements. Teachers may also use a variety of sources, retrieving images from each site without exceeding the limit of free files from any one distributor.

Teachers can also begin to create their own image bank, taking and editing digital images, using the draw/paint tools to make clipart, or scanning drawings and doodles to include in digital products. Parents and students may help to construct these items, and their permission to use these items should be obtained in writing. Giving them credit on Web sites or other digital products is prudent, as each creation does have the innate copyright of the author attached.

There are numerous sources for digital clipart and photographs. With careful searching and a keen eye for terms-of-use statements, teachers can create well-designed multimedia without stretching their pocketbooks or compromising the law.

Savilla Banister is an assistant professor of classroom technologies at Bowling Green State University and the L&L curriculum specialist for visual arts. Banister is a former K–8 music and art teacher, who partners with local K–12 teachers in integrating multimedia technologies into their curriculum.

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Finding Appropriate Online Resources

I am always on a quest for online resources that can be used in the classroom with little or no modification. As a busy educator I like to use lesson plans, Web sites, and multimedia artifacts created and willingly shared by others as a means of varying my own teaching material and providing interest in the class. I recently found two portals worth exploring.

The first, Nortel LearnIT.org, is a non-profit organization and technology communication skills training portal. Its mission is to “prepare teachers, students, and learners of all ages to develop 21st-century communication skills.” The focus is on technology literacy, engagement in learning, and personal achievement. The site offers lesson plans and guides, technology skill building videos, and resources and best practices. It also has a “getting started” section. Material seems to fit best with a K–12 environment; however, there are also post-secondary and professional development categories.

A handy quick search is featured on the opening page for keywords, subject, grade, and technology area. The list of technology learning topics includes imaging, PowerPoint presentations, digital ethics, Web content creation, and more. The topics reflect a smart approach to technology integration, including a focus on social and ethical issues. Resources include streaming video, project-based lesson plans, step-by-step lists, and other resources such as storyboards, rubrics, and help sheets. The resources link also encourages users to submit their own best practice examples of student-produced multimedia.

The second resource, Merlot, is a multimedia educational resource for learning and online teaching. Here you will find peer-reviewed online teaching and learning materials and advice and expertise about education from expert colleagues. The material is aimed at higher education, and the focus is on a community portal for sharing and being recognized for your contributions. The site boasts about 15,000 learning materials in subject-based categories such as arts, business, education, mathematics and statistics, science and technology, and social sciences. There are also community portals such as Teacher Education and Teaching and Technology. Membership in Merlot is free, and currently there are about 38,000 members who can contribute learning materials and create a personal collection of resources.

Merlot features a simple and advanced search function. Despite the emphasis on post K–12, I was pleasantly surprised to find valuable resources suitable for a number of my classes. When searching for “Flash animation” I found a link to a Flash animations in science Web site (cost involved); Descartes’ Cogito as an animation (to be used straight away), and a free Web site from an educator sharing animations for learning how to use the TI 83+ calculator, which I have since passed on to my math colleagues, who expressed their appreciation.

Resources

Nortel LearnIT: <http://nortellearnit.org/>

Merlot: <http://merlot.org/>

—Julie Lindsay, Head of Technology, International School Dhaka, Bangladesh

Teacher Resources