Educational Technology

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Useful Educational Technology Websites

- International Society for Technology Educators
- Partnership for 21st Century Skills
- Virtual Fieldtrips
- Dr. Alice Christie's Virtual Fieldtrip Resource Guide
- Interactive Internet Resources
- Teacher Tube (free online videos)
- Flixxy (free online videos)
- Teaching with Tablets
- 20 ways to use a tablet in the classroom
- The 50 Best Free Teacher Resources of the Decade So far

Useful Websites about WebQuests

- Concept to Classroom: WebQuests
- WebQuest.Org
- Teacher Tap: Locate and Evaluate WebQuests

A Technology Integration Model

Integrating Technology with Content Instruction: Skills for High Achievement

Circle those skills that you teach, model, and reinforce in your classroom.

Purposes for Technology Use	Technology Literacy Skills
Accessing/Acquiring Information **Input**	• Search for and access information on the internet and local area network using search engines. • Use CD's, DVDs, Podcasts, electronic textbooks, and other digital resources to acquire information. • Evaluate information found on the internet. • Use a modem and commercial internet provider. • Use available subscription sites to access information. • Create and maintain a bookmark/favorites annotated resource list. • Use computer-assisted applications for acquiring information, drill, practice, and simulation.
Processing Information **Process**	• Create/use/edit/print word processing documents. • Create/use/edit/print a database. • Create/use/edit/print a spreadsheet. • Create/use/edit/print graphic organizers or other visual representations to construct, process, and understand information. • Summarize information.
Producing/Presenting/ Communicating Information **Output**	• Create a multi-column document (e.g., newsletter, brochure). • Import and manipulate graphics into a document to illustrate a document (e.g., poem, essay, summary, story). • Use presentation software to create and present a slide show with graphics, audio, and live internet links. • Create a web site and/or web page. • Create and edit an original video clip and still digital picture. • Create and edit an audio clip and Podcast. • Use email to send and receive a message. • Attach a document in an email message. • Place a live internet link within a document or slide show.
Monitoring Progress and Making Adjustments **Reflecting and Improving**	• Understands and commits to learning goals and tasks • Makes realistic plans and manages time to address questions and tasks • Remains on task in independent and group situations • Applies established standards while completing tasks/assignments • Uses guidelines and criteria to evaluate work progress

	• Responds productively to feedback from others by making corrections and adjustments • Seeks help when needed from teachers, peers, parents, and other sources • Applies problem solving strategies productively • Applies decision making strategies productively • Shows determination/perseverance in pursuit of a goal • Controls and alters mood and impulsivity • Recognizes incremental progress and celebrates success/achievement • Establishes personal improvement goals and plans • Apply the district/school internet use policy (IUP)

Integrating Technology with Content Instruction: Activities for High Achievement

Circle those activities and activities that you use in your classroom.

Purposes for Technology Use	Integration Ideas
Accessing Information **Input**	• **Keypals** is the Internet equivalent of pen pals. • **Global Classrooms**, which provide a way for large groups of students from different countries to discuss a topic selected by the teacher. • **Electronic Appearances**, which give students an easy way to contact authors and talk about their work. • **Internet Databases**, which provide students with access to more, and more current, information that, could ever be possible through textbooks. • **School-based Internet Home Pages**, where students make their work accessible to students, schools, and communities around the world. • **Podcasts** are teacher or commercially made audio broadcasts often supported by visual slides. • **WebQuests**, where the teacher selects web sites and engages students in creating products, responding to questions, or other purposes and tasks. • **CD ROMS,** which offers many types of content information. engage in drill and practice or simulation activities. • **Computer-Based Learning (CBL) Software and websites**, which offers students the opportunity to engage in a managed set of learning activities, access content information or engage in drill and practice or simulation activities. • **Virtual Fieldtrips,** where trips range from the simple, such as a photo tour of a famous museum, to extremely detailed and high-tech field trips that offer video and audio segments to make the visit more interactive.
Processing Information **Process**	• Word processed documents about content materials • Database showing a collection of information • Spreadsheet showing data with graphs and charts • Graphic organizers or other visual representations to construct, process, • and understand information • Summaries of content information • Experiment write-ups • Simulations • Drill, practice, and application exercises • Journals • Expression and visualization projects • Integrated learning systems exercises • Problem solving with real data sets

Producing/ Presenting/ Communicating Information **Output**	• Multi-column document (e.g., newsletter, brochure). • Slide show • Web site and/or web page • Original video clip and still digital picture • Podcast • E-books • Charts and graphs	• Letter (e.g., business, to editor, request) • Creative writing product • Research report • Questionnaire • Media broadcast (e.g., newscast, radio show) • Humorous product (e.g., jokebook, cartoon, movie) • Resume

Observing Technology Integration in the Classroom

Observation Form for Classroom Instruction with the Use of Technology

Teacher:	Subject: Period:
Observer:	Date:
Length of Class:	Number of Students Per Computer or Technology Tool:

Content Learning Goals	Technology Literacy Goals

Essential Questions for Observations	Observations
What technology-methods were used during the lesson? • Acquire/access information • Process information • Produce/present/communicate information?	
What other teach practices/strategies were used during instruction (e.g. cooperative learning, direct instruction using lecture or demonstration, individual seatwork, drill and practice, project-based learning, group discussion)?	

What technology hardware and software was used during the lesson?	
Essential Questions for Observations	**Observations**
What activities/tasks were students asked to do to demonstrate their learning?	
How did the teacher monitor student progress during the class?	
How did the teacher respond to students learning needs relating to the use of technology during the class? How was assistive/adaptive technology used for students with learning or physical disabilities?	
How did the teacher assess student learning related to the . . . ● content learning goals? ● the technology literacy goals?	
How did the teacher encourage student self-assessment regarding the learning goals and learning strategies and process?	

To what extent were the students engaged in the learning process?	
In what way(s) did the teacher seem to have prepared for the use of technology during instruction?	

A Technology Integration Model

Purposes for Technology Use	Integration Ideas
Accessing Information **Input**	1. **Keypals** is the Internet equivalent of pen pals. 2. **Global Classrooms**, which provide a way for large groups of students from different countries to discuss a topic selected by the teacher. 3. **Electronic Appearances**, which give students an easy way to contact authors and talk about their work. 4. **Internet Databases**, which provide students with access to more, and more current, information that, could ever be possible through textbooks. 5. **School-based Internet Home Pages**, where students make their work accessible to students, schools, and communities around the world. 6. **Podcasts** are teacher or commercially made audio broadcasts often supported by visual slides. 7. **WebQuests**, where the teacher selects web sites and engages students in creating products, responding to questions, or other purposes and tasks. 8. **CD ROMS,** which offers many types of content information. engage in drill and practice or simulation activities. 9. **Computer-Based Learning (CBL) Software and websites**, which offers students the opportunity to engage in a managed set of learning activities, access content information or engage in drill and practice or simulation activities. 10. **Virtual Fieldtrips,** where trips range from the simple, such as a photo tour of a famous museum, to extremely detailed and high-tech field trips that offer video and audio segments to make the visit more interactive.

Processing Information **Process**	1. Word processed documents about content materials 2. Database showing a collection of information 3. Spreadsheet showing data with graphs and charts 4. Graphic organizers or other visual representations to construct, process, 5. and understand information 6. Summaries of content information 7. Experiment write-ups 8. Simulations 9. Drill, practice, and application exercises 10. Journals 11. Expression and visualization projects 12. Integrated learning systems exercises 13. Problem solving with real data sets	
Producing/ Presenting/ Communicating Information **Output**	1. Multi-column document (e.g., newsletter, brochure). 2. Slide show 3. Web site and/or web page 4. Original video clip and still digital picture 5. Podcast 6. E-books 7. Charts and graphs	8. Letter (e.g., business, to editor, request) 9. Creative writing product 10. Research report 11. Questionnaire 12. Media broadcast (e.g., newscast, radio show) 13. Humorous product (e.g., jokebook, cartoon, movie) 14. Resume

Technology Integration Planning Process

This sample implementation plan will contribute to integrating technology with teaching, learning, leading, and serving.

1. Seek administrator approval prior to initiating the plan outlined below.
2. Review technology standards for teachers, students, and administrators (see technology standards produced by the International Society for Technology Educators (ISTE).
3. Determine existing conditions related to the degree to which stakeholders have achieved the standards.
4. Review standards related to an effective technology plan.
   - district technology mission and vision
   - resources to support the system and build capacity
   - technology access
   - connectivity
   - policies, standards, and procedures
   - assessment of effectiveness/accountability
   - professional development
5. Determine existing conditions related to seven components of an effective technology plan.
6. Determine strengths and needs related to items two and four above and make needed or desired changes.
7. Review 21st Century Student Outcomes (see Partnership for 21st Century Skills Framework).
8. Review the current curriculum structure and curriculum delivery to determine existing efforts to integrate the 21st Century Student Outcomes with the current curriculum structure.
9. Review the data collected from items 1-9, create action plans, and seek administrator approval of this technology initiative prior to initiating any further actions. A technology integration plan would be integrated with other district initiatives to assure continuity your strategic plan.
10. Integrate 21st Century Student Outcomes with the current content curriculum. (Note: This outcome may require professional development prior to achieving this step.)
11. Create a professional development plan for teachers, administrators, and classified staff.
12. Identify a cadre of teacher leaders and administrators who will be involved in the first wave of technology professional development. Implementation would be expected in

their educational contexts. Provide technology professional development opportunities and support for teacher leaders and administrators.

13. Provide technology professional development opportunities and support to target teacher groups and implement a plan to monitor and support teachers during implementation.
14. Continue to provide technology professional development opportunities to other target teacher and administrative groups.
15. Provide technology professional development opportunities for classified staff employees (e.g., technicians, paraprofessionals, clerical, etc.)
16. Integrate technology with instruction in content areas and explicitly teach technology competencies and other 21st Century Skills.
17. Measure and celebrate incremental progress of students, teachers, administrators, and classified support staff.
18. Continue providing technology professional development opportunities to stakeholders.

19. Continue to implement aspects of the technology plan including the following:

- district technology mission and vision
- technology access
- connectivity
- policies, standards, and procedures

- resources to support the system and build capacity
- assessment of effectiveness/accountability
- professional development

21st Century Student Outcomes

The elements described in this section as "21st century student outcomes" are the skills, knowledge and expertise students should master to succeed in work and life in the 21st century.

Core Subjects and 21st Century Themes

Mastery of **core subjects and 21st century themes** is essential for students in the 21st century. Core subjects include English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics.
We believe schools must move beyond a focus on basic competency in core subjects to promoting understanding of academic content at much higher levels by weaving **21st century interdisciplinary themes** into core subjects:

- Global Awareness
- Financial, Economic, Business and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy

Learning and Innovation Skills

Learning and innovation skills are what separate students who are prepared for increasingly complex life and work environments in the 21st century and those who are not. They include:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

Information, Media and Technology Skills

People in the 21st century live in a technology and media-driven environment, marked by access to an abundance of information, rapid changes in technology tools and the ability to collaborate and make individual contributions on an unprecedented scale. To be effective in the 21st century, citizens and workers must be able to exhibit a range of functional and critical thinking skills, such as:

- Information Literacy
- Media Literacy
- ICT (Information, Communications and Technology) Literacy

Life and Career Skills

Today's life and work environments require far more than thinking skills and content knowledge. The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills, such as:

- Flexibility and Adaptability
- Initiative and Self-Direction
- Social and Cross-Cultural Skills
- Productivity and Accountability
- Leadership and Responsibility

Technology Plan and Organizational Needs Assessment

Technology Plan and Needs Assessment Inventory

Technology Plan Component				
A Vision for Technology and Student Learning				
1. technology mission				
2. technology vision of learning				
3. technology vision for using technology for services and organizational effectiveness 11.				
Access				
1. hardware replacement, adoption, and expansion plan				
2. software replacement, adoption, and expansion plan				
3. technology hardware and software inventory system				
4. up-to-date student information (e.g., attendance, discipline, grades) system.				
5. file management storage system for students and teachers (e.g., portfolios, student assignments). 6.				
7. universal design access for students with disabilities (i.e., adaptive technology)				
Connectivity				
1. a fast, sustainable local area network (LAN) and wide area network (WAN)				
2. affordable home internet service for students and parents				

3. a school wireless internet and portal connection				
4. effective technology security system				
5. system for parent access to student grades and records				
6. school/district web page and portal for students, parents, and teachers				

Technology Plan and Needs Assessment Inventory

Technology Plan Component				
Policies, Standards, and Practices				
1. information technology improvement process.				
2. policy and procedures for selection and purchasing of software.				
3. a policy and procedures for selection and purchase of hardware.				
4. email and internet use policy and procedures				
5. policy and procedures for research and development				
6. policy and procedures to regarding student personal computers at school				
Resources to Support the System and Build Capacity				
1. an effective and efficient technology maintenance system				
2. a software installation system				
3. an efficient and effective repair system				
4. skillful and client-friendly technology support staffing				
5. sustainable technology financial planning process and resources				
6. community partnerships to support technology use				
7. technology organizational structure and coordination				
Assessment of Effectiveness/Accountability				

1. system to evaluate the effectiveness of technology use				
2. a system to evaluate the impact of technology on learning, teaching, and organizational effectiveness				

Technology Plan and Needs Assessment Inventory

Professional Development				
1. opportunities to learn how to teach basic technology competencies to students				
2. opportunities for teachers to learn basic technology competencies				
3. opportunities for clerical, security, and classroom paraprofessional staff to learn technology competencies				
4. opportunities for teachers to learn technology integration strategies and practices				
5. opportunities for administrators and supervisors to learn technology competencies and support practices				
6. a system for providing just-in-time, on-line support and face-to-face coaching services and resources.				
7. opportunities for technical staff to get ongoing training to have up-to-date technical knowledge and skills				
8. opportunities for staff to be familiar with the selection and use of adaptive technology for students with disabilities.				

WebQuests: Facilitating Inquiry on the Web

A WebQuest is . . ."An inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet." (Bernie Dodge, San Diego State University.)

Types of WebQuests

Short Term:

- Designed to be completed in one to three class periods.
- The instructional goal is knowledge acquisition and integration.
- The learner deals with significant amount of new information and makes sense of it.

Longer Term:

- Designed to take one week to a month.
- The instructional goal is extending and refining knowledge.
- The learner deeply analyzes a body of knowledge, transforms it, and demonstrates understanding by presenting it in some way.

Critical Attributes of a WebQuest

1. **Introduction**

Should orient the learner as to what is coming
Should raise some interest in the learner through a variety of means

2. **Task**

A description of what the learner will have done at the end of the exercise
Could be a product or a verbal presentation

3. **Process**

Clearly described steps
Lets the learners know the process to go through to accomplish the task
Can also provide learning advice

4. **Information Sources**

A list of web pages which the instructor has located that will help the learner accomplish the task.
It may include resources not on the web
All resources may not be used by all

5. **Evaluation**

Evaluation rubrics designed by the teacher are the most authentic assessment
Need to be able to measure results
Evaluation rubrics take different forms

6. **Conclusion**

Bring closure to the quest
Remind the learners about what they have learned
Encourage them to extend the experience into other domains

Products and Tasks Resulting from WebQuests

Retelling Tasks	Students can report on what they've learned by way of slideshow presentations, posters, or short reports. These are the most commonly found inquiry tasks, and the least challenging (or interesting), but they can serve a purpose.
Compilation Tasks	Students can take information from a number of sources and put it into a common format. The resulting compilation might be published in digital or print forms. A compilation task familiarizes students with a body of content and provides them with practice in making selection choices and explaining them, as well as organizing, chunking, and paraphrasing information drawn from a variety of sources in a variety of forms.
Mystery Tasks	Students can be engaged in a well-designed mystery task or puzzling scenario that requires synthesis of information from a variety of sources. Then students can create a puzzle or mystery that cannot be solved simply by finding the answer in given resources.
Journalistic Tasks	Students can act like reporters covering an event. The task involves gathering facts and organizing them into an account within the usual genres of news and feature writing.
Design Tasks	Students can create a product or plan of action that accomplishes a pre-determined goal and works within specified constraints (e.g., financial, legal, physical).
Creative Product Tasks	Creative inquiry tasks lead to the production of something within a given format (e.g. painting, play, skit, poster, game, simulated diary or song) but they are much more open-ended and unpredictable than design tasks.
Virtual Fieldtrip Tasks	Students create a guided exploration through the web that organizes a collection of pre-screened, thematically based web pages into a structured online learning experience for others.
Consensus Building Tasks	Students can be given a controversial topic or task and be required to work with others to come to a consensus. Differing viewpoints must be articulated, considered, and accommodated where possible.
Persuasion Tasks	A persuasion task goes beyond a simple retelling by requiring students to develop a convincing case that is based on what they've learned. Persuasion tasks might include presenting at a mock city council hearing or a trial, writing a letter, editorial or press release, or producing a poster or videotaped ad designed to sway opinions.
Self-Knowledge Tasks	Students can engage in inquiry research or other data collection to achieve a greater understanding of oneself, an understanding that can be developed through guided exploration of on- and off-line resources.

Analytical Tasks	Students are asked to look closely at one or more things and to find similarities and differences, to figure out the implications for those similarities and differences. They might look for relationships of cause and effect among variables and be asked to discuss their meaning.
Judgment Tasks	Judgment tasks present a number of items to the learner and ask them to rank or rate them, or to make an informed decision among a limited number of choices.
Scientific Tasks	Students use the scientific method to explore a problem, issue, or other area of inquiry.

Excellent source for examples of many of the tasks---http://webquest.sdsu.edu/taskonomy.htm