Intelligent Agents
What They Do and How They're Changing Online Learning

This presentation demonstrates several intelligent agent applications designed to function as virtual assistants. Agents to **find**, **filter**, and **fuse** information are demonstrated.

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Welcome

The Quality Matters program has generated widespread interest and received national recognition for its peer-based approach to quality assurance and continuous improvement in online education. It created a set of review criteria based on the research literature and national standards, incorporated these criteria into an interactive web-based rubric with annotations, and developed training and a process for conducting team course reviews.

Quality Matters offers institutional subscriptions, training, and a range of fee-based services.

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**Pointer and Clicker Article**

**Volume 7 Issue 6 - Online Instructor Competencies**

**By: Virgil E. Varvel Jr.**

**Keywords:** Competency, Online Instruction, Online Education, ELearning

This pointer lays out a long list of competencies that have been found to improve practice and student learning and satisfaction in online education. The competencies are arranged by the functional roles of the instructor. At times, there may appear to be some duplication, but if you look deeper, you will see that I have tried to avoid true duplication. For instance, disability considerations are throughout, but one area might refer to the moral obligation, another area to the legal obligations, another to Web design aspects, and another to pedagogical application. Also, for many activities, there are three aspects that may be considered separately. There is the knowledge of an activity, the application of that activity, and the ability to state a rationale for that action. Finally, the alignment of these competencies with MVCR courses is also included. A paper coinciding with the construction of these competencies including more information on their organization has been submitted for publication. A link to the paper will be included here once it is in print. Highlights of this study were presented at the 2007 Illinois/International Online Conference and at the 2007 eLearning Conference in Albequerque, New Mexico. The PowerPoint used in the second talk is linked below.

- [PDF competencies aligned to MVCR program](#)
- [PowerPoint presentation](#) from the eLearning 2007 Conference in Albequerque, New Mexico.
Zull “the curriculum should enable the firing of the right networks & neurons (lesson strategies), create repeated firings (practice) and should make the learner feel good.”
Coby MPC-841 MP3 Player/USB Flash Drives

MP3 Player/USB Flash Drives

- LCD displays song title, album and artist
- Stores music, data, documents, and pictures
- Up to 16 hours of digital voice recording
- Direct connection to USB port
- PC and Mac compatible
- Easy plug-and-play operation
- 3 11/16" W x 1 3/16" H x 13/16" D
- Uses 1 AAA battery (not included)
- Includes neckband headphones, USB cable, and carrying strap

Part No. MPC-841 or MPC841

Visit the manufacturer's website...

USA orders only (no international orders, please).
Ships in 1-3 days.

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Overview

What is Gabcast?

Gabcast.com is a podcasting and audiblogging platform that offers an easy way to create and distribute audio content. Most people will use a touch-tone telephone to make their recordings but we also provide worldwide access to the service through VoIP. Once you have made a recording and have published it, a newsfeed is immediately and automatically updated to alert subscribers to your channel.

What Can I Do With Gabcast?

- You can embed a flash audio player into your personal or corporate website/blog and communicate with your friends/family/colleagues/customers
- You can voice your political opinions or use it as part of a political campaign
- You can record Greetings
- You can be a Citizen Reporter
- You can conduct Interviews
- You can use it as an Educational Tool
- You can use it for Get-togethers
- You can Speak Your Mind
- You can use it to describe an item for sale on Ebay (Show Me!)
Intelligent Agents
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Warming Up

Getting To Know You

I came to this session to.

I would like an intelligent agent that.
Types of Needs

1. Search
2. Inform
3. Tutor
4. Answer Questions
5. Research tools
6. Launch and give presentations
7. Courses on-line
8. Giving exams on-line
What Kinds of Things Can Intelligent Agents Do?

- Search for information automatically
- Answer specific questions
- Inform you when an event (e.g., an article has been published, your favorite book is on sale, the road you travel is under construction, your name has been mentioned on the web) has occurred
- Provide custom news to you on a just-in-time format
- Provide intelligent tutoring
- Find you the best prices on nearly any item
- Provide automatic services, such as checking web pages for changes or broken links
What is an Intelligent Agent or Bot?

- **Internet bots**, also known as **web robots** or simply **bots**, are **software applications that run automated tasks** over the internet.

- Bots may also be implemented where a response speed faster than that of humans is required (e.g., gaming bots and auction-site robots) or less commonly in situations where the emulation of human activity is required, for example chat bots.
Features of an Agent

- Responsive (explicit: programmed, implicit: learned)
- Predictable
- Interactive (accessible)
- Trustworthy
- Expertise
- Skill
- Quick
- Accurate
- Impervious to boredom 24 X 7
The (partial) Solution

- Intelligent Agent Technology has arrived
  - Automated software programs - Triggered automatically
  - Efficient, fast, readily available
- First Generation now in use
  - Find, filter, fuse information for users
  - Minimal learning
  - Automate many user functions
- Second Generation on the horizon
  - Proactive “learning”, smarter
  - Provide “context”, not just “content”
  - Just-in-Time, Just-the-right amount information providers
Search

➢ **What’s available?**

➢ **What to look for?**
WEB SEARCHING

- More than 90 search engines grouped into 10 categories
- Elimination of duplicates and broken links
- Web page preview

MANAGING SEARCHES & RESULTS

- Keep a history of your searches using folders
- Filter results by result status and link validity
- Sort results by many fields
- Search within found results using keywords or Boolean queries
- Save and archive found pages
- Generate exhaustive search reports
- Keyword highlighting in result lists and Web pages
- Share, import and export results
Inform

- Amazon “agents” (new books)

- ChangeDetect (ChangeDetect is a FREE service that saves your favorite web pages, monitors content for changes and sends an automatic email notification to you whenever your web pages are updated.)
Tutor

www.autotutor.com
Answer

- Ask (answers natural language questions from a database)  [http://www.ask.com](http://www.ask.com)

- WebGuide (assists in navigating the web)

- KnowAll (provides answers to plain text to natural language questions)  [http://www.worldfree.net/](http://www.worldfree.net/)

Source: [http://www.botknowledge.com](http://www.botknowledge.com)
Answer

- AskJeeves is now ask.com
- (answers natural language questions from a database) www.ask.com

Source: http://www.botknowledge.com
Questions

- Used to answer cleaning questions
- Cleaning advice and tips for home care

www.mrclean.com
Read

- UK news, Channel 5
- Reads the news/a text file

www.ananova.com
Shop

- **DealTime** (shops for the best book price)
  
  [http://www.dealtime.com/main/1,3241,,00.html](http://www.dealtime.com/main/1,3241,,00.html)

- **MarketMaker** (negotiates for buyer or seller for books or music)

- **Compare Net** (compares products for price, features)
  
  [http://www.compare.net/](http://www.compare.net/)

Source: [http://www.botknowledge.com](http://www.botknowledge.com)
Cleopatra

http://darkwing.uoregon.edu/%7Emharrsch/cleopatra.html
Cleopatra was a dynamic warrior queen of the first century B.C. Although she took her own life after she and Marc Antony were defeated by Octavian (later to be known as Augustus) at the battle of Actium, she has been resurrected with the assistance of artificial intelligence software developed by Zabaware, Inc. As she has spent the last 2000 years in the afterlife, she knows little of our world. The memories of her own world are also a bit clouded by the sands of time but with the help of her mentor, Libitina Antonius, her memories will return. To assist in this process, converse with Cleopatra and your interactions will be recorded so Libitina may study the conversation logs and "refresh" her memory. Cleopatra's personality is based upon the characterization presented in Margaret George's novel "Memoirs of Cleopatra" and biographies written by such historians as Emile Bradford. To speak with Cleopatra, enter your name below and click "Begin Conversation".

Enter your name: 

Begin Conversation

This image of Cleopatra is based on an anatomical reconstruction developed from analysis of facial structures of Cleopatra depicted on coins issued during her reign.

Cleopatra's mentor, Libitina researches appropriate web pages to include that provide additional information about each topic. If you would like to suggest a particularly insightful web site, please e-mail Libitina at mharrisch@uoregon.edu.
mySimon - virtual-learning-agent system, which mimics the shopper's behavior

www.mysimon.com
Key Trend
User Free-For-All

- New Technology
- Falling Barriers
- Heightened Competition
- Rapid Commoditization
- Eroding Loyalty
- Shrinking Profitability
Agents Learn

- by observing and imitating the user
- through receiving feedback from the user
- by receiving explicit instructions
- by asking other agents for advice (from peers)
Web Examples

- e-commerce
- Corporate Intranets
Benefits to User

- Personalized help with boring or time-consuming tasks when and how you want it
- Ability to concentrate on key task/data
- Ability to deal with larger quantities of information
Educational Uses

- Research tools
- Launch and give presentations
- Courses on-line
- Giving exams on-line
- Online tutor
- Improve retention rate of students in ALN courses

“Intelligent Agents for Online Learning”
JALN Volume 3, Issue 2 - November 1999
http://www.aln.org/alnweb/journal/Vol3_issue2/Choon2.htm
Asynchronous Learning Networks (ALNs) appear to work best when there is a high level of online facilitation. Learners appreciate immediate feedback and the ability to get help rapidly. This finding has been shown in several ALN venues [1], [2]. The research reported in this paper describes a series of experiments designed to evaluate ways by which online courses (i.e., ALN courses) can be improved by the introduction of autonomous intelligent software agents.

Intelligent Agents (IAs), termed "knowbots" can perform the duties of online facilitators for routine tasks. Checking computer code, responding to simple questions, reminding learners about the need to turn in assignments and potentially even grading essays [3] are among the types of things that intelligent agents can accomplish.
The instant availability of a human tutor online would be ideal. However, providing this capability is no more realistic than continuously providing a human tutor for the traditional classroom-based learning experience. Cost and availability are limiting factors in supplying continuously attentive human tutors.

Often students simply want questions answered and would be happy with any type of effective immediate feedback – human or machine.

We think that feedback can be provided by intelligent agents in an on-demand format for certain types of information requirements. An augmented anytime capability is particularly important in learning environments in which online tutors may not be available for extended periods (e.g., due to differences in time zones or to late-night student study habits).
C. Knowbots as a Tutor
From qualitative analysis of data obtained through the survey of participants, a very high number of learners in the knowbot cohort had positive attitudes toward the use of knowbots as a learning tutor. A likely reason is that knowbots provided immediate feedback to them when they needed it. Immediate feedback, including presenting learners with possible solutions, helped the learners to quickly solve their problems. Other than reporting the assignment checking status, immediate feedback also provided other assistance about where to find information in the learning materials and where to seek further help. In these cases, knowbots helped learners reduce the time required to find answers to their problems. Anytime feedback also facilitated self-paced learning. Some students prefer to move at their own rate; it is indeed possible that the knowbot system supported such students better than group-oriented exercises.
We found that using intelligent agents in our online workshops showed a very positive association with a higher completion rate of the workshops. However, due to the fact that the research is correlational in nature, we cannot assert that the use of knowbots had a direct effect on the completion rate. Nevertheless, we can say (1) that there was a dramatic increase in completion rate in the treatment that employed knowbots, and (2) the majority of the learners expressed positive attitudes toward using the knowbots, specifically as a tool that helped motivate them to complete the workshop.
Advantages of intelligent learning environments

- Time
- Convenience
- Adjust the interactions according to preference
- A tool for the instructor
- Flexibility
- Creative potential
Currently

Pros
- Automate many common functions
- Free up user’s time for more difficult tasks
- Capture interactions (for data mining)
- Many are inexpensive or free

Cons
- Limited “fusing” of data; mostly finding, some filtering
- User expectations rising rapidly
- No standards for data exchange
- Interoperability limited
It's Free
Buyer Beware

- **Before You Download: Research first, download second:** Before you download or install a free application, hit your favorite search site and look up the product and vendor names. If there's no mention (other than at the publisher's own site), the program might not be widely used, and that could be a red flag. Trust your gut instinct if the software developer's site makes you leery; skip the download if you think there's a chance it's questionable.

- **Ask your neighbor (or an expert):** On sites like [www.download.com](http://www.download.com) and [www.nonags.com](http://www.nonags.com), you can consult editorial or user ratings and look at the number of downloads to determine whether the product has negative reports and whether it is popular. There are plenty of well-known, good programs, so don't take a risk, Catlett advises.

- **Watch the generics:** Some scam artists choose product names (or register Web domains) similar to those of reputable applications to confuse downloaders. Make sure you're getting the product you want. Lesser-known programs that promise the world may be the handiwork of spammers and/or spyware makers. If you're not sure about a tool, search on Google to read what others have written about it before you download.

• **Picasa** is software that helps you instantly find, edit and share all the pictures on your PC. Every time you open Picasa, it automatically locates all your pictures (even ones you forgot you had) and sorts them into visual albums organized by date with folder names you will recognize. Picasa also makes advanced editing simple by putting one-click fixes and powerful effects at your fingertips.

• **Picture Resizer 1.5** - An easy-to-use and free tool for batch resizing of JPG pictures and photos.

• **Atomic Learning** provides web-based software training and curriculum resources for more than 100 applications students and educators use every day. Our just-in-time approach focuses on answering the common questions people have when learning popular software packages.

• **Audacity** is a free, easy-to-use audio editor and recorder for Windows, Mac OS X, GNU/Linux, and other operating systems.
- **EclipseCrossword** is the fast, *easy*, free way to create crossword puzzles in minutes.

- **StickyPad** is an invaluable, easy-to-use tool that lets you place sticky notes on your desktop. You can type notes to yourself, set meeting and appointment reminders, keep track of a to-do list, and anything else you would do with paper notes.

- **YouTube** is a site that allows you to broadcast your videos free.

- **Windows Defender** is a free program that helps protect your computer against pop-ups, slow performance, and security threats caused by spyware and other unwanted software.

- **ShowCase Sidebar** allows you to view your open tabs in either a sidebar format in your browser or as a new tab. You can jump to the open tab by clicking on the picture icon.
Educational Free Sites

- Audio documentaries [www.soundportraits.org](http://www.soundportraits.org)
**Arts**

**Leonard Bernstein: An American Life** a guide to an 11-part documentary illuminating the life and work of one of America's greatest classical musicians, Leonard Bernstein (1918-1990). An audio overview -- and Web sites for learning about Bernstein and classical music -- are provided. (National Endowment for the Humanities) See http://wfmt.com/bernstein/

**Moldenhauer Archives** presents 130 music manuscripts, letters, and materials from a 3,500-item collection documenting the history of Western music from the medieval period through the modern era. Essays by musicologists discuss items from Bach, Beethoven, Brahms, Chopin, Handel, Liszt, Mozart, Schoenberg, Stravinsky, and other composers. (Library of Congress) See http://memory.loc.gov/ammem/collections/moldenhauer/

**NEA Jazz in the Schools** traces the history of jazz from its birth in New Orleans to the swing era, bebop, and new frontiers. Five lessons include essays, videos, photos, and nearly 100 music clips of Scott Joplin, Jelly Roll Morton, Louie Armstrong, Fletcher Henderson, Duke Ellington, Count Basie, Charlie Parker, Bud Powell, Miles Davis, Charlie Mingus, Sonny Rollins, John Coltrane, and others. Lessons include social and political context and are designed for history classes as well as music. (National Endowment for the Arts) See http://media.jalc.org/nea/home.php
Math

- **Calculus on the Web** offers an interactive environment for learning, practicing, and experimenting with the ideas and techniques of calculus. It is organized in seven parts: Precalculus; Calculus I, II, and III; Linear Algebra; Number Theory; and Abstract Algebra. (National Science Foundation) See http://www.math.temple.edu/%7Ecow/

- **Mathematics: Research Overview** looks at topics of major research in mathematics: image creation, statistics, inverse problems, CPU testing, materials and nanotechnology, proteins, random graphs, prime numbers, optimization, design, financial mathematics, weather and climate simulation, rare events, and high-dimensional data sets. (National Science Foundation) See http://www.nsf.gov/news/overviews/mathematics/index.jsp
Science

The Chemistry of Health tells how chemistry and biochemistry are increasing our understanding of human health. Learn how biochemical relays keep our organ systems operating, how food is broken down and used to build tissues and organs, and how tiny biological probes and instruments can track single molecules. Topics in the 60-page booklet include folic acid, sugars and fats, DNA, making medicines, harnessing biology's magic, and more. (National Institutes of Health) See http://publications.nigms.nih.gov/chemhealth/

Earth and Environmental Science: Research Overview examines questions that scientists are pursuing: What part do we play in earth's changing climate? What can rock layers tell us about earth's history? How can we understand the forces that lead to earthquakes and volcanoes? How can organisms live without sunlight? How do long-term changes affect earth's ecosystems? (National Science Foundation) See http://www.nsf.gov/news/overviews/earth-environ/index.jsp

Exploring the Environment features 25 online modules that put students in problem-based learning scenarios. In one module, students predict the impact of increased carbon dioxide on the wheat yield in Kansas. In another, they predict weather 48 hours in advance. Topics include coral reefs, climate change, the Everglades, mountain gorillas, rainforests, volcanoes, water quality, and ozone depletion. (National Aeronautics and Space Administration) See http://www.cet.edu/products/ete/overview.html

Inside the Cell takes students on a close-up tour of the processes occurring in our bodies. Learn about the cell's brain and skeleton, cellular rush hour, and the death of a cell. Find out about lysosomes (cell recycling centers and garbage trucks) and mitochondria (cell power plants). Read about cutting-edge cell biology research and techniques, which are featured in the 80-page booklet. (National Institutes of Health) See http://publications.nigms.nih.gov/insidethecell/

NASA Connect: Sun-Earth Day features teacher guides and other resources for studying sun-earth connections and celebrating Sun-Earth Day. In "Ancient Observatories," students measure the movement of the sun and find solar noon. In "Venus Transit," students learn about scale models and the "astronomical unit," which is used to determine distances from the earth to other planets and stars. In "Dancing in the Night Sky," students learn about the Aurora Borealis, or Northern Lights. (National Aeronautics and Space Administration) See http://sunearthday.nasa.gov/2006/events/broadcasts.php
Path of Totality: Measuring Angular Size and Distance examines the natural phenomena that create a total eclipse. NASA scientists and engineers introduce a satellite used to make artificial eclipses in order to learn about the sun's corona. Students measure the angular size and predict the angular distance of objects in the sky. (National Aeronautics and Space Administration) See http://connect.larc.nasa.gov/programs/2005-2006/path_of_totality/

Physics Education Technology (PhET) produces fun, interactive simulations of physical phenomena. More than 35 simulations let students experiment with circuits, string tension, kinetic and potential energy, radio waves and electromagnetic fields, balloons and static electricity, ideal gas and buoyancy, velocity and acceleration, sound waves and the Doppler effect, and more. (National Science Foundation) See http://www.colorado.edu/physics/phet/

Physics to Go is a collection of reviewed resources for teaching and learning about astronomy, electricity and magnetism, fluids, light, modern physics, motion and energy, quantum physics, and waves and pendula. (National Science Foundation) See http://www.compadre.org/informal/index.cfm

The Structures of Life takes us into the world of "structural biology" -- a branch of molecular biology that focuses on the shape of nucleic acids and proteins (the molecules that do most of the work in our bodies). Learn about the structures and roles of proteins, tools used to study protein shapes, how proteins are used in designing new medications (for AIDS and arthritis), and what structural biology reveals about all life processes. Find out about careers in biomedical research. (National Institutes of Health) See http://publications.nigms.nih.gov/structlife/

Sun-Earth Day is a series of programs and events throughout the year that culminates with a celebration of the spring equinox. "Eclipse: In a Different Light," this year's theme, shows how eclipses have inspired people to study the sun-earth-moon system. Join this journey of exploration and discovery in preparation for a total solar eclipse. (National Aeronautics and Space Administration) See http://sunearthday.nasa.gov/

Teach the Earth offers hundreds of teaching activities, visualizations, and resources for teaching earth science. Categories include biosphere, climate change, energy/material cycles, geology and human health, geochemistry, hydrosphere and cryosphere, mineralogy, ocean systems, petrology, solar system, and earth history. Special sections are provided on using data and teaching quantitative skills. (National Science Foundation) See http://serc.carleton.edu/index.html

Water on the Web offers water science units and tools that help students understand and solve real environmental problems using advanced technology. Learn about aquatic ecology, water quality, and watersheds. See maps, summaries, and information on lakes and rivers nationwide. Use data visualization tools to watch data change through time and explore relationships among variables. (National Science Foundation) See http://waterontheweb.org/
History

**Bound for Glory: America in Color** is the first major exhibit of 70 color prints (1939-1943) showing the effects of the Depression on people in rural America and small towns, the nation's subsequent economic recovery, and the mobilization for World War II. (Library of Congress) See [http://www.loc.gov/exhibits/boundforglory/](http://www.loc.gov/exhibits/boundforglory/)

**The Development of the Industrial United States (1870-1900)** offers documents and images for learning about Bell's patent for the telephone, Edison's patent for the electric lamp, Glidden's patent application for barbed wire, the Homestead Act of 1862, maps of Indian territory, child labor, and the Chinese Boycott Case. (National Archives and Records Administration) See [http://www.archives.gov/education/lessons/industrial-us.html](http://www.archives.gov/education/lessons/industrial-us.html)

**The Emergence of Modern America (1890-1930)** features the 1897 petition against the annexation of Hawaii, political cartoons on progressivism and the 1912 election, woman suffrage and the 19th Amendment, the Zimmermann telegram (1917), photos of the 369th Infantry, posters from the Food Administration during World War I, the Volstead Act and prohibition documents, and the unfinished Lincoln Memorial. (National Archives and Records Administration) See [http://www.archives.gov/education/lessons/modern-america.html](http://www.archives.gov/education/lessons/modern-america.html)

**Great Depression: Dust Bowl Migration** includes photos, a teachers guide, and other resources for learning about the largest migration in American history. This migration occurred in the 1930s when poor soil conservation practices and extreme weather in the Great Plains exacerbated the existing misery of the Great Depression. (Library of Congress) See [http://memory.loc.gov/learn/community/cc_greatdepression_kit.php](http://memory.loc.gov/learn/community/cc_greatdepression_kit.php)

**Hotchkiss Map Collection: Confederate Army Maps** contains maps made by Major Jedediah Hotchkiss (1828-1899), a topographic engineer in the Confederate Army. Hotchkiss created detailed battle maps of the Shenandoah Valley; some were used by Generals Lee and Jackson. The collection includes maps from post-war years -- maps with information about railroads, minerals and mining, geology and history (mostly of Virginia and West Virginia). (Library of Congress) See [http://memory.loc.gov.ammem/collections/maps/hotchkiss/](http://memory.loc.gov.ammem/collections/maps/hotchkiss/)
Idea of America Essay Contest invites high school juniors to write an essay examining the historical debate over the benefits and disadvantages of adopting the First Amendment. While its words are familiar, the rights it guarantees -- involving religion, speech, free press, public assembly, and petition -- were modified many times in the First Congress (1789). Essays must be received by April 19, 2006. The best essay will receive $5,000. Three runners-up will each receive $1,000. (National Endowment for the Humanities) See http://www.wethepeople.gov/essay/index.html

Smithsonian Source: Colonial America offers primary sources and tools for using them in the classroom. Watch an anthropologist examine skeletons for clues to daily life in Jamestown. Find lessons on the Boston Massacre, Stamp Act, patriot women, Pocahontas, and money. Use questions -- built around primary documents -- to explore the clashing views of revolutionary colonists and loyalist colonists. Examine the political, religious, economic, and social reasons for the Revolution. (Smithsonian Institute) See http://www.smithsoniansource.org/display/topic/viewdetailshis.aspx?TopicId=1004

Texas Beyond History is a virtual museum of online exhibits, lessons, and interactive learning that covers 13,500 years of human history in Texas, from Clovis hunters to 20th century cotton farmers. Explore archeological sites and historic landmarks. See rare photos, maps, artifacts, and reconstructed scenes of the past -- more than 6,000 images. (National Endowment for the Humanities) See http://www.texasbeyondhistory.net

World War II Military Situation Maps, 1944-1945 contains maps showing troop positions beginning on June 6, 1944, to July 26, 1945. Starting with the D-Day Invasion, the maps give daily details on the military campaigns in Western Europe, showing the progress of the Allied Forces as they push towards Germany. Some of these 416 maps and 115 reports were used by U.S. commanders. (Library of Congress) See http://memory.loc.gov/ammem/collections/maps/wwii/
**History/Social Studies**

**Ancient World Mapping Center** promotes cartography, historical geography, and geographical information science within the field of ancient studies. The Center is developing a community of scholars, teachers, and specialists to collaborate in the updating and expansion of the spatial and historical reference information assembled by the Classical Atlas Project. The Center also offers free digital maps of the ancient world for educational use. For most maps, a blank version suitable for quizzes and customization is provided. (National Endowment for the Humanities) See [http://www.unc.edu/awmc/index.html](http://www.unc.edu/awmc/index.html)

**Islamic Manuscripts from Mali** showcases 22 manuscripts from Timbuktu and the surrounding regions of Mali and West Africa, enabling students to understand the rich culture and society of the region. Especially noteworthy are the extensive collections of photos showing the domestic architecture, the characteristics of Islamic manuscripts, and an array of interactive maps made in Europe beginning in the 16th century. (Library of Congress) See [http://international.loc.gov/intldl/malihome.html](http://international.loc.gov/intldl/malihome.html)

**MyMoney.gov** is the U.S. government's Web site for teaching all Americans the basics about financial education. Whether you're buying a home, balancing your checkbook, or investing in your 401k, MyMoney.gov can help you do it better. Find important information from 20 federal agencies. See if you have "financial smarts": take the MyMoney interactive quiz. Read the national strategy for financial literacy. (Multiple Agencies) See [http://www.mymoney.gov/](http://www.mymoney.gov/)

**Revising Himself: Walt Whitman and Leaves of Grass** is a virtual tour of Whitman's life tracing the 40-year history of his famous masterpiece, from when it was first published (1855) to the ninth and final edition (1892). Depicted are selected manuscript drafts, notes for poems, information on his changing career paths, first-hand correspondence, and treasures from friends and family. The site helps show how Whitman's vision of America influenced the course of American literature. (Library of Congress) See [http://www.loc.gov/exhibits/treasures/whitman-home.html](http://www.loc.gov/exhibits/treasures/whitman-home.html)
Social Studies

Money Math: Lessons for Life is a teacher's guide for helping middle school math students learn how to manage their money, stay out of debt, and save for retirement. Lesson plans, reproducible activity pages, and teaching tips are included in the 86-page guide, which draws on real-life examples from personal finance. (Department of the Treasury) http://www.publicdebt.treas.gov/mar/marmoneymath.htm

U.S. Securities and Exchange Commission: Teachers and Students offers tips, fact sheets, and online tools for learning about the basics of saving and investing, helping students understand the importance of planning for their financial future, and identifying questions to ask about our investments. Learn about mutual funds. Try the online retirement calculator. Take an online quiz to "test your money smarts." (Securities and Exchange Commission) See http://www.sec.gov/investor/teachers.shtml
Search Toolbar & Utility Reviews

By Danny Sullivan | May 28, 2003

Search toolbars and utilities let you search and navigate the web by using desktop software. A comprehensive list of these can be found in the Search Utilities section of Search Links. Below, you'll find reviews of such tools. Please note that article links often change. In case of a bad link, use the publication's search facility, which most have, and search for the headline.

Recent Reviews

Monitoring Web Pages 24 Hours a Day
SearchDay, April 09, 2003
http://searchenginewatch.com/searchday/article.php/2178631
**Why use Watson?** Watson gives computer users a new way of finding useful information by proactively seeking, gathering and delivering information as it is needed. Watson provides related information based on the contents of a web page being viewed or document being created. It allows its users to gain access to a wealth of information in context, without the trouble of searching. For example, Watson can be used to find analyst reports while preparing a presentation, find product reviews while reviewing sales material, find primary research while authoring a report, or even to find blog entries about a recent news event.
Explore rich 3D content

Seeing 3D terrain and buildings is one of the coolest features of Google Earth. We've added higher-quality terrain data for many mountainous regions, as well as support for "textured" 3D buildings—meaning bricks look like real bricks, glass looks like real glass, and overall, the world looks more like the real world. It's just one more step on the path of creating a life-like 3D model of the whole planet.
AutoTutor: An Artificially Intelligent Tutor

AutoTutor is a web-based intelligent tutoring system developed by an interdisciplinary research team. This team is currently funded by the Office of Naval Research and the National Science Foundation and is comprised of approximately 35 researchers from psychology, computer science, linguistics, physics, engineering, and education. The Tutoring Research Group (TRG) has conducted extensive analyses of human-to-human tutoring, pedagogical strategies, and conversational discourse. This research has provided the empirical and theoretical foundations for developing intelligent tutoring systems that help the students learn by engaging them in a natural language conversation about a particular subject matter. Currently AutoTutor comes in two forms: The computer literacy version is designed to help students learn basic computer literacy topics covered in an introductory course (e.g., hardware, operating systems, and the Internet). The conceptual physics version is designed to help students learn Newtonian physics. AutoTutor can also be adapted for use in a variety of other content domains.

AutoTutor works by having a conversation with the learner. AutoTutor appears as an animated agent that acts as a dialog partner with the learner. The animated agent delivers AutoTutor's dialog moves with synthesized speech, intonation, facial expressions, and gestures. Students are encouraged to articulate lengthy answers that exhibit deep reasoning, rather than to recite small bits of shallow knowledge. For some topics, there are graphical displays and animations. To learn more about the individual modules that comprise AutoTutor click the links to the right.

You can view our past and current National Science Foundation Grant Proposals to gain a more comprehensive overview of the Autotutor project:

- National Science Foundation grant: Effectiveness of Pedagogical Agents in Regulating Students' Understanding of Science (2006-2009). Roger Azevedo is PI.
- National Science Foundation grant: Monitoring emotions while students learn with AutoTutor (2003-2008). Art Graesser is PI.
- National Science Foundation grant: Developing AutoTutor for computer literacy and physics (2001-2005). Art Graesser is PI.
- Original National Science Foundation grant on computer literacy: AutoTutor (1997-2001).
The Bots

- General Search Bots
- Specific Search Bots
- Knowledge Management Bots
- News Bots
- Chatter Bots
- Shopping Bots
- Collaborative Bots
- Telephony Bots
- Informant Bots
- Miscellaneous Bots

http://www.botknowledge.com/
# Web Page Evaluation Checklist

1. Go to Google and perform a search on a controversial topic, such as: "nuclear armageddon" or "prions danger" or "stem cells abortion"

2. Use this Checklist to try to evaluate systematically some of the search results.

<table>
<thead>
<tr>
<th>Title of page you are evaluating:</th>
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</tr>
</thead>
</table>

### 1. Look at the URL:

- **Personal page or site?**
  - ☐ ~ or % of users, members, or people
  - ☐ ~ or % of users, members, or people

- **What type of domain is it?**
  - if com, org, net, edu, .gov, .mil, .us
  - ☐ non-US: _____
  - ☐ other: _____

- **Published by entity that makes sense?**
  - Publisher or Domain Name entity: __________
  - Publisher or Domain Name entity: __________

### 2. Scan the perimeter of page, looking for answers to these questions:

- **Who wrote the page?**
  - ☐ E-mail ☐ Name:

- **Dated?**
  - Date ______ Current enough?
  - Date ______ Current enough?

- **Credentials on this subject?**
  - Include date this URL was last used.

<table>
<thead>
<tr>
<th>Evidence?</th>
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### 3. Look for these indicators of quality:

- **Sources well documented?**

- **Complete?**
  - If 2nd-hand information, is it not altered or forged?

- **Links to more resources?**
  - Do they work?

- **Other viewpoints?**
  - Bias?

### 4. What do others say?

- **Who links to it?**
  - Many or few? Opinions of it?

| Many or few? | Opinions of it? |
|--------------|----------------|---|

- **Is the page rated well in a directory?**

- **Look up the author in Google**

### 5. Does it all add up?

- **Why was the page put on the Web?**
  - ☐ Inform, facts, data ☐ Explain
  - ☐ Persuade ☐ Sell ☐ Entice
  - ☐ Share/disclose
  - ☐ Other:

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- **Possibly ironic? Satire or parody?**

### BOTTOM LINE: Is the web page as good as (or better than) what you could find in journal articles or other published literature that is not on the free, general web?
CUSTOMIZATION
- Select active search engines for each category
- Availability of result layouts (compact, standard and detailed)

INTEGRATIONS
- Search directly from Internet Explorer 5 or later
- Browse through your results directly from your favorite browser
- Searches created using the extensions integrated into IE are automatically centralized in Copernic Agent's search environment
- Additional results browsing tools available with Internet Explorer 5 or later

MISCELLANEOUS
- Automatic search engine and software updating
- Extensive contextual help
Resources Discussed