

Assessment of Online Digital Resources

Shamin Renwick

Paper presented at the XXXI Annual Conference of the Association of Caribbean University, Research and Institutional Libraries (ACURIL), 2001, in La Habana, Cuba.

Abstract

In order to be an effective librarian, today, one has to provide access to the best online resources. With over 2 billion web pages available and search engines returning thousands of responses to queries, there is information overload on the World Wide Web. This as well as other facts like anyone could publish anything on the Internet, indicate that it is imperative that these resources be evaluated.

This paper proposes to discuss how the traditional methods of assessment as well as new criteria particular to online resources can be used for evaluation. The main criteria to be discussed will be the content, usability and access of web pages with suggestions as to how to apply and where possible provide relative illustrations. Peculiarities related to certain types of resources as well as aspects of an effective website will be highlighted.

Introduction

Development of Online Resources

In the latter part of the last century, digital resources, starting with audio-visual resources, became part of a library's collection. Prior to this, library collections were based mainly on print media. This was only an introduction of electronic resources to libraries.

The Internet – a global network of networks enabling computers of all kinds to directly and transparently communicate and share services throughout much of the world - was started in 1969 with 4 computers in the United States. This number multiplied rapidly and by 1984, there were 1000 host computers, by 1987 – 10,000, two years later 100,000, and by 1992- 1,000,000 host computers existed around the world. (Cooke, 1999) This opened a realm of information and communication that was not even perceivable by science fiction writers in either content or magnitude at that time or before.

With the easy availability of computer technology, by way of the Personal Computer (PC) in the early 80's, came multimedia resources - CD ROMs and floppy diskettes. As multimedia browsers improved in the 90's, this method of surfing the Internet became the easiest and most user friendly. Many of the services on the Internet like e-mail and ftp became available via the World Wide Web (WWW).

The WWW is, in fact, information stored on computers (servers) all over the world to which the Internet provides access using specific standardised protocols. This started a new era of information access – that of online digital resources. For a brief history of the Internet you can check Walt Howe's website (<http://www.walthowe.com/navnet/history.html>).

The Internet is an ubiquitous medium and wherever it can be afforded it is available. According to Hobbes' Internet Time Line v 5.2 in June 1993, there were about 130 servers (a server may have multiple sites), by 1997 there were 1 million servers and in 1999, 22 million servers around the world. According to OCLC's Web Statistics in December 2000, there were about 7,128,000 unique websites. It is estimated that there are over 2 billion web pages. In March 2001, Global Reach stated that there were about 391 million users with Internet access worldwide. (<http://www.glreach.com/globstats/index.php3>).

Characteristics of Online Information

"Information overload" is perhaps quite an appropriate term to describe the present situation. The result of so much information to so many people is clutter. As a result, the quality of information on the WWW can be less than desirable. It could be considered suspect as anyone can now publish almost anything on any topic, without the rigorous publishing process needed for print resources and in the case of academia, without the peer-review process.

With an abundance of personal home pages, sites that are never updated, deliberate hoaxes and an increase in the number of commercial sites, there is a lot of useless as well as misleading and inaccurate information being posted on the World Wide Web. For example, out of 41 medical sites, which carried information on how to treat fevers in young children, only 4 sites carried accepted and approved treatment (Impicciatore, 1997)

Another characteristic of online information is its instability. Pages can be moved from site to site and new addresses can be assigned, equipment can breakdown or telecommunication links can malfunction. This results in information becoming inaccessible, sometimes only temporarily, and links being broken. Note that the ability to present the most up-to-date information at a moments notice also relies on this transient aspect of the Internet.

Librarians and Evaluation

Information Technologists have made information available to all and have provided search facilities to the best of their abilities. It is now up to us Librarians to do what we do best. The Librarian's job is and always has been to collect, evaluate and organise information. We need to eliminate misinformation and time wasting sites. We need to look out for hoaxes. With regard to online digital resources, it is the technology that is new not how and why we do what we do. As Kuny (1998) says

"Technological progress has changed how libraries do their work, not why.... we would suggest that technology will not substantially alter the business of librarians – connecting people with information..."

However, the use of the technology does imply new skills but does not change the principles involved

Definitions

At all times, we must provide the best information, which is appropriate to our users needs. To do this, the aspect of the quality of online information arises. Information quality is the

ability of a product or service to meet the need of a particular user or group of users (Cooke, 1999)

Online resources are electronically-available information available at the time of use – whether it is a database or a record in it or a newsgroup archive or a two-line message in the newsgroup (Cooke, 1999) In this paper, electronically-available information is that which is available via the Internet.

The services available on the Internet are

- electronic mail (e-mail)
- file transfer protocol (ftp) archives
- gopher sites (a gopher system is a simple menu based interface that can connect you to text files, downloadable binary files, file searches telnet connections, or to another menu)
- telnet connections (the ability to connect directly to another computer)
- electronic discussion groups – newsgroups and listservs
- web pages

As mentioned before some of these services are available via the Web Pages. Web pages are identified by a single URL (Universal Resource Locator or an address). The Web page is the single entity representing the combination of resources like text files, images. A Web site is a collection of one or more web pages. See the W3 Org site at (<http://www.w3.org/1999/05/WCA-terms>.) for further details.

Method of Evaluation

In this paper, I shall be focussing mainly on web pages and some of the services, which are available in this format. - organizational pages, home pages, subject based websites, e-journals, image based and multimedia sources, newsgroups and discussion lists,

Applied to this new era, the act of assessing online information is three-fold. One is to first, understand the nature of online information, second, is to find the best information and the third, is to actually evaluate according to specified criteria.

Nature of Information on the WWW

Firstly, understanding the nature of information on the WWW means recognizing that the formal editorial process of implementing standards as in print is mostly absent. There will be information with typographical and grammatical errors as well as with factual errors, out-of-date information, opinions stated as fact, bias, deliberate fraud and hoaxes (Cooke, 1999) These problems of accuracy, reliability and usefulness occur with whatever kind of online resource that is involved.

Another aspect mentioned before is the instability of the information on the WWW. Recently, there has been an increase in the infomercial type of sites i.e. where commercial sites provide a great deal of information and there is a blur as to where the promotional information begins.

Finding the best information: Search Tools

Secondly, finding the best information, involves the ability to search the Internet, use review information and browse, that is, following links from site to site. In using search tools like search engines and directories, one must be aware of how these tools operate.

Search engines generally work using software that searches web pages and creates indexes of what they find. They generally use the criteria of location and frequency, i.e. where and how often a keyword may occur on a web page. Some search engines also use the “page rank” as criteria, i.e. the number of links to that page. This indicates popularity.

Of the general search engines - Google claims to have indexed a little over 1 billion web pages (1/2 is fully indexed by a robot and the other ½ partially indexed). Specialised search engines check a smaller number of pages and the best directories e.g. dmoz have only covered about 2 million sites.

Note that results from some search engines may not always return the best at the top of the list. There is also the new initiative whereby sites pay a fee to search tools in order for them to be elevated to the top of the results from a relevant search.

Directories, on the other hand, create hierarchical indexes of information. They utilize human input in order to determine the subject heading and selection of the sites – so there is some evaluation done at this level. There are search tools like Britannica that rate the sites they provide.

As we look at other tools, like subject gateways, Internet guides, virtual libraries –there is an even a greater degree of human evaluation of the sites to which these tools may provide access. However, these tools can still only cover few of the total resources available. Of course, the specialised search tools for the various disciplines cover even smaller numbers of pages but professionals in the fields or a librarian have generally selected these resources so the quality of the results can be counted on.

There are the fee-based facilities, which provide excellent but few resources. The search engine Northern Light indexes the full text of about 3400 journals in addition to indexing the Internet. The search is free, and the full text of journal articles is generally available for \$1 to \$4 (US) apiece.

Two sites Search Engine Watch (<http://www.searchenginewatch.com/>) and Search Engine Showdown (<http://www.notess.com/search/>) can assist in selecting the best search engines for your needs as well as keep you up to date with search engine technology.

Finding the best information: Review materials and browsing

To find the best information in print we use review materials, the same applies to online resources. There are resources, which review, evaluate and recommend the best online resources. In addition to print material (books and journals) that does this there are websites (which will send you regular e-mail), discussion lists and newsgroups, e-journals and e-newsletters available on the Internet.

Browsing, that is, checking links that may be present on various websites, and obtaining links from colleagues and newspapers are other good sources of review information. However, you will need to be able to evaluate sites according to specific criteria in order to get the best information out there.

Criteria for Evaluation

The traditional criteria for evaluation of print are the purpose, coverage, authority and reputation, accuracy, currency, style and format of a resource. Applied to online digital resources, all of these are relevant but also includes new criteria of accessibility and usability. The need for the new criteria is, of course, as a result the different media that information technology brings.

Applying these criteria and how stringently you use them will vary depending on why you are doing the research. Is it for academic purposes, fun or for selection for an e-library collection? Also important is for whom are you doing the assessment – child or adult? What compromises you make in selection, that is, which weaknesses you will accept in one area for strengths in another will be based on the users needs. The skill of evaluation is more of an art than a science and due to the newness of the online forum much of it is intuitive and one which you become more adept at with experience.

Examination of Criteria

Discussion of the criteria can be looked at in three (3) areas – content, usability and accessibility. Specific criteria to note with certain resources will be highlighted. We shall also emphasize the need to compare to other resources and to make an overall impression of the site.

To illustrate why we need to examine resources we will look at a site that petitions for a ban on dihydrogen monoxide.

- Ban Dihydrogen Monoxide (<http://www.virtualschool.edu/mon/Quotes/BanDHMO.html>)
- DHMO Homepage (<http://www.dhmo.org/>)

All of the information on the site is true and it enraged a lot of people until you realise that the site is discussing water.

Content

This refers to all aspects of the content that indicate the quality of the site. – The purpose, coverage, authority, accuracy, objectivity, currency and maintenance.

Purpose

This relates to a statement of intended use, scope and audience. This information is very important as it indicates how relevant a site might be. In determining purpose one needs to decide what is the motive of the page. Is it for advocacy, marketing, news, education or entertainment? Watch out for the infomercial. Check what is not being said. Copyright information should be stated clearly. Authors should indicate how citations to the info should be made.

To ascertain: check the “about this site” info or the frequently asked questions (faqs).

An examination of the URL of the page will be illustrative. A business/ commercial/ marketing page will be trying to sell or promote a product and news pages will be offering the most current information. They often carry URLs ending in .com. Informational sites end in .edu or .gov as

often educational or governmental institutions sponsor these sites. Personal web pages are usually, unaffiliated to an institution and are often posted for personal reasons of advocacy or entertainment. They have a variety of endings (e.g. .com, .edu, etc.), a tilde (~) or an author's name is frequently embedded somewhere in the URL

- Let us look at the following sites:
<http://whitehouse.gov> Present official Whitehouse site
<http://whitehouse.org> About George Bush (Sr)
<http://www.whitehouse.net> Spoof on the Clinton's time there.
<http://www.whitehouse.com> (X rated)
- [Melatonin Central](http://www.melatonin.com) (<http://www.melatonin.com>) This site provides a lot of good info but it does set out to sell its product.

Coverage

Coverage is probably the most important aspect as this can override all other factors. It relates to the subject area and type of material as well as the range, the level of detail, the scope / comprehensiveness and retrospective aspect of the resource. If the resource is available in other formats, does the online version enhance the information in any way or does it detract. If so, how much of a problem is it. For example, some journal sites do not offer access to the full text of the print.

To ascertain: Browse the site or search the site for material with which you are familiar. Examine any links as they can enhance the usefulness of the site if the links are useful. A URL may contain a two-letter code representing the country from which a site originates and, as such, indicate the kind of content or, at least, the origin of the information

e.g.

.tt (Trinidad and Tobago)

.cu (Cuba)

.uk (United Kingdom).

- News sites like the BBC (<http://www.bbc.co.uk>) and TIME (<http://www.time.com/time/index.html>) and CNN (<http://www.cnn.com>) often have comprehensive coverage of news items.
- A quick look at Roget's Thesaurus (http://humanities.uchicago.edu/forms_unrest/ROGET.html) reveals that the print version has no advantage over the online version.

Authority

This is determined by the knowledge and reputation of the persons responsible for producing an item. A site is considered authoritative if the author is a subject expert or the institution responsible for its production is an expert in the field. Authoritativeness affects the credibility and reliability as well as the perception of the info.

To ascertain: If the information is of an academic nature do a literature search on the author. If the author is an expert in the field or just a layman – look on the site for some such data– it may be at the bottom of the page or on a separate page altogether. Where authors may be unknown, the affiliated institutions will be important in determining authoritativeness. There should be an e-mail address to which you can write for information.

If there is no info – check URL. .gov, .net, .edu, .com, .org (not for profit) will give an idea of the sponsorship or type of site.

On the site you can check sponsors, publishers or funding agencies, if any. Counters can indicate popularity or look for a review of the site from a reputable source.

Sometimes, it is necessary return to the home page of the website to get more information on a specific web page. Note that newcomers can provide good information.

- [OncoLink \(http://oncolink.upenn.edu\)](http://oncolink.upenn.edu) - illustrates authority up front – editorial board, about us, sponsor, disclaimer, contact info.
- The page on Asian Studies WWW Virtual Library (<http://coombs.anu.edu.au/WWWVL-AsianStudies.html>) has an author, contact information and institutional affiliation.
- Some of the things I learned along the way (<http://www.geocities.com/Yosemite/5000/tips.html>) This page has no author and at a first glance you do not even realise that it is about puppies.
- Martin Luther King (<http://www.thekingcenter.com>)
- Martin Luther King (<http://www.martinlutherking.org>)

At first glance these two look alike. An examination of the content reveals that there is a difference in purpose of the site but it is only on clicking the return email address of the latter, that you realise that it is posted by Stormfront, an extremist group.

Accuracy

Accuracy refers to the factual correctness. However, determining this can be affected by the nature of the information and expertise of evaluator.

To ascertain: Look at the data - is it factually accurate (This is not always easy to do if you are unfamiliar with the subject matter)

Look for typos, spelling, and grammatical errors. Is info based on research or other evidence?

Are there references to published info? Are there indications of quality control (refereeing or editing)? Is there a facility for sending corrections?

- The First Male Pregnancy <http://www.malepregnancy.com/> - How true is this? Site quality is good though.

- Mankato, Minnesota Home Page (<http://lme.mankato.msus.edu/mankato/mankato.html>) it looks good until you realise that Minnesota does not have a tropical climate.
- [The True but Little Known Facts About Women with Aids, with documentation \(http://147.129.1.10/library/research/AIDSFACTS.htm\)](http://147.129.1.10/library/research/AIDSFACTS.htm) Compare this site with the following one.
- Official Aids site: <http://www.cdc.gov/hiv/stats/internat.htm>

Objectivity

Look for point of view or bias. Lack of objectivity does not necessarily mean the source provides substandard information. To the contrary, many authors use unimpeachable data combined with a compelling writing style to influence readers. Beware of partiality, but consider the information's possible accuracy. Facts may be used to support some a point of view.

To ascertain: Are the organization's biases clearly stated? If there is any advertising on the page, is it clearly differentiated from the informational content? What is the motive of the author? Is there a political or ideological bias, or does the advertising aspect of the site bias the info promoted?

- Consumer reports online (<http://www.consumerreports.org>) Attempt at unbiased reporting
- Halloween (<http://www.jeremiahproject.com/halloween.html>) This site starts with facts and then attempts to persuade the reader in a specific direction.
- Attention Deficit Disorder and Hyperactivity Success (<http://www.all-natural.com/add.html>) The author is also selling his services

Currency and Maintenance

Currency refers to how up to date the source is and maintenance refers to if the info is kept up to date. Currency is important, as outdated info may not only be useless but inaccurate and misleading. However, currency may not be as important in all subject areas such as in history, law or literature but it will be with regard to medicine and science

To ascertain: check as to when the material was produced, when the site was last updated. Check for any info on the frequency of updating. Search the site for current info, check if links are up-to-date? Is there a maintenance policy? Is there anything 'under construction'?

- Evaluating Web Pages for Relevance
<<http://english.ttu.edu/kairos/2.2/news/youcanuse/craig/page01.html>>
Indicates creation date, last update
- Take a look at this article "The Medium Doesn't Get the Message: When does breaking health news become permanent information?"
(http://www.detwiler.com/html/presentations/Detwiler_report_200101.pdf)

This article discusses how often breaking news and drug information updates can take many months before being incorporated into top health websites.

Usability

This refers to the ease of use as well as the style and functionality of the web page. It involves navigation, user support, appropriate use of technology and aesthetics of the site. Good design of web pages will assist their use, and may make the difference between recommending a resource and rejecting it.

Navigation

Is the site easy to move around and locate info – are there navigation aids like links to *home, back, go to the top*? Are there aids to finding info within it - Is there a site map, table of contents, an internal index of links for long pages, an overall index, menus or search facilities? Are there many clicks to locate relevant info?

Are hypertext links up-to-date or presented with annotations? Do not take for granted that links are the best, check for your self.

User Support - The support that is offered to users to help them answer queries and problems that arise whilst using the resource.

Is the site intuitive and user friendly or do you need training and familiarity to use it?

Check value and usefulness of any support services -Is help info available, is it clear, is it sufficient, and is it context sensitive? Is it valuable and useful?

Are there special instructions for interactive sections?

Appropriate use of Technology –

Are there many images, java, and frames? Note that these are important for sites for children.

Are graphics effectively used?

If frames are used are they really needed?

Some sites offer ‘text only’ versions or ‘no frames’ version of pages.

Aesthetics

Is the presentation and arrangement consistent? Is info categorised and appropriately organised?

Are pages too short or too long? Are pages clear and aesthetically pleasing?

Do you have to scroll up and down a lot or, even worse, from side to side?

Is text easy to read and headings stand out? Is it well written?

Is advertising blatant or discrete?

Access

This refers to site access, security and privacy issues, language aspects, metadata and restrictions on viewing Accessibility can affect whether a source is used once or returned to regularly or even seen at all. This is the criterion that will affect strongly whether you would include a site in an e-library collection.

Site Access

How reliable and stable is the site? Has the site changed URL – is there re-direction information?

Is download time tolerable? Are mirror sites available?

Security and Privacy

The ability to download a site can be affected by security and privacy applications.

Does your site need cookies to be loaded – systems with high security levels may prevent the site from being downloaded?

Languages

The language in which a site is written and whether it can be accessed in other languages is becoming increasingly important. Translation services are becoming available.

Use of metadata

Meta tags are a form of metadata (the descriptive information that is included in the head section of the html source page for a site). If present, and done according to a standard like the Dublin Core, you can find information quite a bit of information about the site as there may be information about the author, keywords, copyright info, etc. If you 'View Source' with your browser, you can examine the HTML information of the web page. Well-written meta tags add credibility to the information

Lawrence and Giles (1999) in research published in *Nature* said that the simple HTML "keywords" and "description" meta tags are only used on the homepages of 34% of sites. Only 0.3% of sites use the Dublin Core metadata standard.

Restrictions on viewing - The use of technologies and standards should enable users to access and utilize all aspects of the resource. Can the site be seen on all browsers? Does the site require lots of memory, speed and special support for colours as well as java script, frames, tables and plugins? If you are to refer a site with a license attached make sure that your users are covered. Whether a site is free or requires registration, proof of membership or payment of fees are important? Subscriptions may be required or one must have an Internet Protocol (IP) address for some sites. There may be software restrictions e.g. sites with files in pdf format or in flash technology may not be seen on users computers who do not have these applications or plug ins. Are there any hardware or multimedia requirements?

Essential criteria for some types of resources on the Web

We shall now discuss essential criteria for some resources available on the WWW, for example, organizational pages, home pages, subject-based websites, databases, e-journals, image based and multimedia sources, newsgroups and discussion lists.

Organizational pages

Of importance in assessing these is the information on authority and reputation as well as currency and maintenance.

House Rabbit Society: (<http://www.rabbit.org>) - Good information, last updated Oct 6, 2000

ACURIL (<http://acuril.rrp.upr.edu>)

Home pages

All of the criteria above are needed to assess the quality of home pages – most important may be coverage (is it for the authors interest or is it for a wider audience? How accurate and what is the expertise of the author? – this being the most difficult of all the criteria to determine

John Faughnan's Home Page: (<http://faughnan.com/index.html>)

On the site map on this site is this personal information:

Personal

- [An "Alternative" CV 7/96](#)
- [Bibliographic Sketch](#)
- [Contact Info 5/19/00](#)
- [Current Projects](#)
- [Resume 4/01](#)
- [Family Album](#)

This establishes his authority to write on the topics he chooses. He also explains his motives. There is an e-mail contact on the home page.

Subject-based websites

Of importance here is the coverage – how original is the info, is it a list of links, are there annotations, the authority, the popularity, are there reviews for the site, accuracy- is the info referenced or published otherwise? Is it logically presented and is there a site map or search facility?

- Cancer.org: <<http://www.cancer.org> >

Databases

There should be introductory info with purpose, coverage and audience. It should be comprehensive, records should be extensive and suitable, and the authority should be of the highest reputation. There should be browsing and searching facilities available. One should be able to export records. There should be contact information available. Databases, generally, should be easy to use. Are there errors and indications of quality control? Are training courses available? Is there a telephone help line? Is there contact info? Is there response to email and telephone messages and the response time acceptable?

For Bibliographic databases - Are there references, abstracts or full text available and to what extent can one search by author, title, and keyword? Are there other limitations on searching?

Ease of use of search facility

- PubMed (<http://www.ncbi.nlm.nih.gov/PubMed>) PubMed provides access to over 11 million citations from MEDLINE and additional life science journals. PubMed includes links to many sites providing full text articles and other related resources. Its search facility is easy to use, though some basic training for the users might be necessary.

E-journals

Note if the purpose is for advertising only. To what is one given access? Is there an archive and is it searchable – is it useful and effective, can articles be obtained – in pdf? For academic journals is there a paper equivalent? Is it refereed or indexed?

- Priory On-line Journals (<http://www.priory.com>)

Image based and multimedia sources

These sites should have explanatory text available – the file formats used and size should be indicated. The reputation should be good. It should be current and well maintained. Mirror sites will be useful. Images should be in thumbnail format- note if they are in black or white or colour, if videos are 2 or 3 dimensional. Copyright and contact info should be clearly stated. The presentation and arrangement is quite important here

For teaching materials- is it possible to download using ftp for local use or is it on a WWWsite?

- Bristol Biomed Image Archive (<http://www.brisbio.ac.uk>)

Newsgroups and Discussion lists Archives

Types of messages, i.e. one off or is there discussion, is it moderated what is the reputation and how does it compare with others, who are the participants and what is the level of expertise, is the traffic manageable, are there filters or labels for messages, are messages available in digest mode, is an archive available, who is responsible for the group?

- Archive of LIBREF-L@listserv.kent.edu (<http://listserv.kent.edu/archives/libref-l.html>)

Comparing with other sources

When doing this utilize all the criteria identified above, that is, purpose, coverage, authority and reputation, accuracy, currency and maintenance, accessibility, presentation, usability and access. Compare cost and value for money. Compare availability via the Internet as opposed to other means of access. If the resource is derived from another format, for example print, does it have all the features of the original? Have extra features been added? Does it complement another resource, for instance, by providing updates to a print source

- How unique is the information on the site e.g. the visible human project (http://www.nlm.nih.gov/research/visible/visible_human.html)?

Assessing overall quality of source

To make an overall impression, the subject knowledge of the assessor is important.

What is your perception of value and usefulness?

What do the reviews and recommendation of other users indicate?

Is the site included in any database of high quality materials? Is the "look and feel" that of an academic resource, or does it seem too commercial? Check persons who may have used it

Some last words on evaluation

Remember that any evaluation of a web resource is as of a particular point in time - an evaluation at a different time may lend different results.

Comparison to other sites is important to instil one's own reference point of knowledge.

As one becomes familiar with online resources, one is able to compare and create a picture in one's mind as to what exists and what is best and relevant. For once you have become familiar with what is a good reference book, you then have the ability to judge all others by comparison. Tillman (2000) stresses the ease with which you find information on the above criteria is important to its underlying quality as it underscores the thinking by the creator of the site.

Also helpful in validating sites are the use of standards for Internet publishing. For example, there are three web quality initiatives by Health on the Net (HON) (<http://www.hon.ch>), Internet Health Coalition (<http://www.ihealthcoalition.org/>) and Health Internet Ethics (<http://www.hiethichs.org>) within the healthcare area that can assist with validation of health web sites. Websites that subscribe to these initiatives adhere to certain agreed to principles with regard to the information they publish on the Internet.

Conclusion

In conclusion, therefore, I would like to reiterate that evaluation of online digital resources is basically common sense for librarians. You need to understand the nature of online information, be able to find the best resources in a changing environment and have certain criteria against which you evaluate a resource. Developing technology is an imperative part of the development of the Internet and, thus, we need to keep up to date with not only new technologies but how sites and search tools may change their modus operandi.

It is important that evaluation is necessary to remove time wasting sites and hoaxes. Different disciplines may have certain aspects to which one has to pay more attention e.g. in Health, information must be accurate above all else because mistakes could be fatal.

However, evaluation of online resources is an evolving technique as the Internet is constantly growing and access to it is developing as well. In searching the WWW, one must remember that about a study in *Nature* in 1999 stated that 16 % of the web can be located through the 11 top general search engines. The other 84% is what is referred to as the Invisible Web and is made up of information stored in databases. This has resulted as much of the web is not accessible due to the software that the search engines use to index the web <<http://www.completeplanet.com/tutorials/deepweb/summary03.asp>. >

Librarians need to find out how to access and deal with this aspect of the Web.

Yes, the Internet has a great deal of junk but there are wonderful treasures of information. That aspect of the Internet, which makes it so easy – right there on the computer, right now – wherever you are once you are connected, is also wonderful but critical thinking is an imperative by all users.

Though access to cyberspace allows for equality in terms of the information needed for growth and development, affordability remains limited. Therefore, those of us with access and a responsibility to provide the best information have placed upon us the onus to do so economically and efficiently within time and cost.

In the Caribbean there is the bigger imperative as well as the altruistic one - we need to have the best of these resources available to our people if we are to maintain a reasonable development rate and be able to compete and exist in the modern world.

For more information on this topic see appendix A for a list of additional resources

May 30, 2001

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Appendix A

List of Additional Resources **For Assessment of Online Digital Resources**

Discussion Groups

TITLE	Description	Subscription Info
NETTRAIN	Network trainers list	send email to listserv@ubvm.cc.buffalo.edu subscribe NETTRAIN <your name>
Web4Lib	Library Based WWW servers And Clients	send email to listproc@library.berkeley.edu subscribe web4lib <your name>
BI-L	Bibliographic Instruction	send email to listserv@bingvmb.cc.binghamton.edu subscribe BI-L <your name>
COLLIB-L	College Librarians	send email to listproc@willamette.edu subscribe COLLIB-L <your name>
Libref-L	Library Reference issues	send email to listserv@listserv.kent.edu subscribe libref-l <your name>
Net-happenings	Net-happenings distributes announcements about the latest Internet resources.	http://listserv.classroom.com/archives/net-happenings.html

Tutorials

"The Internet Detective." <<http://sosig.ac.uk/desire/internet-detective.html>>

University of Albany Libraries Internet Tutorials <<http://library.albany.edu/internet/>>

Websites

Web Page Evaluation Criteria <<http://www.ux1.eiu.edu/~cfmggb/web.htm>>

Evaluation Websites and Information <<http://www.namss.org.uk/evaluate.htm>>

10 Things to Know about Evaluating Medical Resources on the Web
<http://cancertrials.nci.nih.gov/beyond/evaluating.html>

Discovery School.com Teacher Helper: critical evaluation information
<http://school.discovery.com/schrockguide/eval.html>

The ICYouSee Guide to Critical Thinking About What You See on the Web
<http://www.ithaca.edu/library/Training/hott.html>

Criteria for assessing quality of health information on the Internet
<http://hitiweb.mittek.org/docs/criteria.pdf>

Quality Selection Criteria for Information Gateways <<http://sosig.ac.uk/desire/q1cont.html>>

How to critically analyze information sources <<http://www.library.cornell.edu/okuref/research/skill26.htm>>