Using Technology in Helping Students Achieve 21st Century Skills: A Pilot Study

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Background

As we enter the 21st Century there is a great deal of discussion in business and education circles alike about the type of skills our youth will need to survive and thrive in this century. At the same time, there is little known today about the level of 21st Century skills students currently have. In part this is because, as a nation, we are still in the process of articulating the specific skills needed, and in part it is because too little systemic examination of existing skill levels has been undertaken. Educational Testing Service (ETS) has begun to address this issue by developing a 75-minute scenario-based test to measure high school senior and college freshmen students' Information and Communication Technology (ICT) Literacy skills; skills defined by ETS as, "the ability of post-secondary students to: define, access, manage, integrate, evaluate, create, and communicate information in a technological environment," (http://thejournal.com/articles/17084).

During the spring of 2006, ETS offered high schools and universities across the country the opportunity to take an early version of the assessment. One of those high schools was Skowhegan Area High School (SAHS) in Maine School Administrative District #54 (MSAD #54). A total of 279 students (70 ninth graders, 26 tenth graders, 162 twelfth graders and 21 "others") took the ETS Early 2006 Administration Core Level test along with 658 high school seniors from eight other high schools across the country. An additional 2,559 college students at various universities also took the ICT exam.

Skowhegan Area High School Performance on the ETS ICT Assessment

An analysis of the test results for Skowhegan Area High School revealed that the schools' students performed well on the assessment when compared with other students participating in the April 2006 testing. As may be seen in Table 1 on the next page, despite the fact that the reading level of the ICT assessment was targeted for high school senior/college freshmen and the

economic advantages of the majority of participating high schools when compared with SAHS (see Appendix A for comparison list of schools), Skowhegan freshmen scored slightly above all other high school seniors taking the exam (127.3 mean score vs. 126.6). In addition, the Skowhegan seniors planning on going to a four year college scored better than their counterparts at the other high schools (149.7 mean score vs. 132.6).

Table 1: SAHS and other Schools' Students ETS Test Scores

	SAHS Freshmen			SAHS Seniors			ETS HS Seniors (excludes SAHS)		
	n	**mean**	**std. dev.**	**n**	**mean**	**std. dev.**	**n**	**mean**	**std. dev.**
All Students	70	**127.3**	32.65	162	130.1	39.05	658	**126.6**	NA
Not College Bound	**	**	**	38	103	26.977	68	104.5	NA
2 Yr. College	**	**	**	49	120.5	37.308	94	111.9	NA
4 Yr. College	48	132.6	33.15	72	**149.7**	35.48	499	**132.6**	NA

** base sizes too small

The results suggested that the work Skowhegan has been doing preparing students for the 21st Century is showing some progress. It must be noted, however, that the large variance associated with student scores in this ETS version of the assessment (measured in standard deviations) suggests some limitations of the ETS assessment and/or considerable differences in student performance on the test. Still, even with these possible limitations the results are promising.

Further analysis of the ETS test results by SAHS staff with help from the Center for Education Policy, Applied Research, and Evaluation (CEPARE) at the University of Southern Maine (USM), indicated that students at Skowhegan were fairly skilled at locating potentially useful websites for school related work, but could benefit from instruction in four of the tested skill areas (evaluate, integrate, create and communicate). The SAHS team of administrators, technology integrationists, curriculum specialists, and teachers decided to focus their effort on helping students enhance their skills in the specific area of evaluating information obtained online. According to ETS documents, this includes the ability to judge the quality, relevance, authority,

point of view/bias, currency, coverage or accuracy of digital information. At this point CEPARE formed a partnership with MSAD #54 and SAHS to develop a model/process by which 21st Century Skills could be taught to students.

School-based Need

As a result of the ETS exam, school officials were made more aware of the lack of continuity in the teaching of research skills amongst classrooms throughout the school. They agreed that working with CEPARE on this project would allow them the opportunity to create and test materials that could potentially be given to all teachers for use on all assigned research projects. This type of cross-curricular tool would allow students access to the same process in multiple subjects thus increasing the likelihood that transference would take place. The high school principal noted that communication between the computer applications teachers, who are responsible for teaching technological and citation skills as they relate to research, and the English/Language Arts teachers, who are responsible for using that format in the classroom is poor. In addition, there is little communication between other subject area teachers and those teachers responsible for teaching research skills. The ETS exam results indicate that some of what is happening in Skowhegan is working quite well, but school officials and CEPARE staff agreed that reinforcing these skills in an organized way would improve the students' ability to conduct online research even more.

Methodology

Initial project planning meetings took place during November and December of 2006. During those meetings, participating staff and teachers were brought together to discuss and plan the project. The team made the decision to include upper elementary students (6th grade) as well as middle school students (7th and 8th grades) in addition to 9th grade students at SAHS in the project. The ability to effectively evaluate information obtained online is important for all students doing research and is particularly important in middle schools in Maine where all 7th and 8th grade students learn in a 1:1 laptop environment.

Goals of the Project

The primary goal of this collaborative project between MSAD #54 and CEPARE was to create a model/process to help students in 6th, 7th, 8th, and 9th grades learn how to evaluate electronic/digital resources within the context of authentic learning activities.

The team set the following guidelines for the project:

1. Input to the project should be as broad as possible and include expertise from teachers, administrators, technology integrationists as well as curriculum specialists.
2. Materials developed (the "intervention") should be designed for use by classroom teachers and be integrated into the existing curriculum.
3. Teachers participating in the project should receive a small stipend for the extra work required in conducting the study (collecting student data, providing researchers with feedback and documentation, attending meetings).

The team set a time frame to conduct the pilot project/research with students during April and May of 2007. The intervening time between November 2006 and April 2007 was used to develop a project plan, create materials for the intervention, create teacher and student interview guides, and to develop assessment tools. A more detailed project task list and timeline appears in Appendix B.

Project Staff

The project was spearheaded at Skowhegan primarily by Dorothy Small, Technology Integrationist at SAHS and Rick Wilson, principal at SAHS. Both Small and Wilson worked together to coordinate meetings, communicate with teachers, and serve as the link between CEPARE and MSAD #54. In addition to these two key players, several others played important roles in providing support for the project. These included:

Participant	Role
Laura Richter	Technology Integrationist, Skowhegan Area Middle School (SAMS)
Steve Chiasson	Technology Integrationist, K-6
John Krasnavage	Principal, Skowhegan Area Middle School (SAMS)
Dawnela Sheehan	Assessment Coordinator, SAD #54
Erin Wood	7-12 Literacy Specialist
Marti Pakulski	Library Media Director, SAHS
Sharon Lambert	Technology & Career Education Department, SAHS
Leanne Walker	Research Analyst, CEPARE
Sarah Wintle	Research Associate, CEPARE
David Silvernail	Director, CEPARE

In addition, six teachers from grades 6, 7, 8 & 9 were recruited to participate as either control or experimental teachers. Their primary roles were to implement the curriculum intervention materials with students in their classrooms and administer pre-and post assessments. Experimental and control classroom teachers working on the project included:

	Experimental Group	Control Group
Grade 6 (Margaret Chase Smith Elem. School)	Linda Greenlaw	Mary Herrick
Grades 7 and 8 (Skowhegan Area Middle School)	Julie Wallace, Science	Jason Bellerose, Social Studies
Grade 9 (Skowhegan Area High School)	Kate Drummond, Science	Scott Pillsbury, Science

Intervention

The curriculum intervention materials were created primarily by the technology integrationists, Dorothy Small, Laura Richter, and Steve Chiasson, on the MSAD #54 team. The materials were designed to be used by each of the experimental teachers, irrespective of the grade level and content currently being taught. A major goal of the project overall was to create a process that could be translated to various grade levels and across all subjects so that ultimately learning could be reinforced throughout the students' academic experience. The intervention consisted of a Teacher Guide as well as a Student Resource Guide (see Appendix C for a copy of the materials).

The intervention focused on enabling students to gain skills in answering three key questions: Does the content of the website appear to be useful? What is the apparent purpose of the website? How reliable is the information contained on the website? The amount of time teachers spent providing the intervention to their students was determined by the teachers themselves and varied among teachers and grade levels. No guidelines were specified by the project team and teachers were encouraged to use the materials in whatever content area they deemed appropriate. The experimental classroom teachers reported spending a total of between 45-60 minutes of instruction in 6th, 30 minutes of instruction in 7th & 8th grades and two hours of instruction in 9th grade.

Assessments

The assessment was scenario based (students were asked to plan a week's worth of healthy menus by seeking out information online using three pre-determined web sites). Students were directed to three specific websites and were then asked to evaluate the usefulness, relevance, purpose, and reliability of the three websites in relation to the task they had been given. A copy of the assessment and websites used in conjunction with that document appear in Appendices D and E.

The assessments were developed by the CEPARE and MSAD #54 team, and pre-tested for appropriateness and clarity. Several students were asked to take the draft assessment and were interviewed by the SAD #54 technology integrationists to check for language difficulties and clarity of instructions. As a result of this student input, slight wording changes were made to the final version of the assessment.

Once the assessment was finalized, control and experimental students completed the online assessment between April 6th and April 10th. The same assessment was used as the post-test for both the experimental and control groups after the intervention had been administered. The post assessment was taken over a period of 6 weeks because the intervention was designed to be used within the context of the participating teacher's curriculum and specific

dates for the instruction could not be set. In order to develop a scoring rubric for the assessments, the MSAD #54 technology integrationists who created the intervention were asked to take the assessment online. Their responses were used by CEPARE to develop the scoring rubric (see Appendix H).

Student sample sizes for each grade are included in the table below:

Table 2: Student Participation - Experimental vs. Control by Grade

	6th grade	7th grade	8th grade	9th grade	Total
Pre Assessment	n=	n=	n=	n=	n=
Experimental	16	18	15	23	72
Control	15	19	19	65	118
Post Assessment	n=	n=	n=	n=	n=
Experimental	16	18	15	18	67
Control	15	18	17	51	101
Matched Pre-Post	n=	n=	n=	n=	n=
Experimental	16	18	15	18	67
Control	15	18	17	51	101

The pre-and post-assessments were scored by the CEPARE project staff. Careful calibration of the rubric was done by CEPARE staff members on a sample of student assessments at the start of the scoring process as well as several times during scoring of the approximately 350 pre-and post-assessments. In order to score each exam individually, student assessments were grouped randomly into sets of 50-75. Three members of the research staff scored one set of student responses at a time, meeting after each set to determine if exams were being scored consistently. Student scores were based on values assigned using the rubric as a guide.

Student Interviews

Twelve students were interviewed by CEPARE staff. Four students from each grade level (two experimental and two controls) were interviewed after taking the pre-assessment. The same students were interviewed again after taking the post-assessment. The purpose of these interviews was to better understand the student's thought processes involved when they are evaluating a website as well as to obtain feedback on the intervention, assessments and project overall. Student interview questions appear in Appendix F.

Teacher Interviews

Rick Wilson, SAHS principal, interviewed all participating classroom teachers both prior to and after completion of the project. Teachers were asked questions about previous student work around evaluation skills as well as about the presupposed skills of students currently in their classes. Teacher interview questions appear in Appendix G.

Results

Results from the pre-and post-assessments were analyzed using descriptive and inferential statistics. Analysis of the pre- and post-assessment scores indicated that the scores of students who received the intervention were significantly higher on the post-assessment than scores of students who did not receive the intervention for the 7th, 8th and 9th grade students combined. This information appears in Table 3. Further analysis indicated there were no statistically significant differences in pre-test scores for the experimental and control groups ($p>.05$), but there were significant post-test differences ($p<.05$). The experimental group students outperformed their control group cohorts. In addition, analysis of the data for different grade levels indicated that the intervention was most effective with 8th graders, and somewhat mixed for the other grade levels.

Table 3: Pre-Post Assessment Differences – Experimental vs. Control Groups

7th/8th/9th Grades		Mean	Std. Dev.	P value	Effect Size
Pre Test	Exp.	14.55	4.49	0.262	0.19
	Control	15.52	5.11		
7th/8th/9th Grades		Mean	Std. Dev.	P value	Effect Size
Post Test	Exp.	16.47	5.5	0.021	0.409
	Control	14.19	5.58		

It should be noted that sixth grade students were excluded from the analysis. This was done because the interview evidence indicated that 6th graders struggled with the intervention. The one-on-one interviews revealed a great deal of confusion about the intervention among the four students interviewed.

The students did not appear to understand that they were being asked to evaluate three different web sites looking for information that would help them prepare a week's worth of menus. They were also unable to explain or elaborate on the responses they had given on the assessments.

An analysis of student responses to individual assessment questions also revealed mixed results. Table 4 reports the questions that were asked about each of three web sites as well as the total number of possible points students could have received on the post-assessment (among all students who took the post-assessment), the number of actual points received, and the percentage of correct answers those points represent.

The majority of students (57%) were able to determine how useful a website would be to them when given an assignment and were able to determine the main purpose of the website. The majority (58%) were also able to distinguish fact from opinion. Only 25%, however, were able to correctly identify a website as being a primary or secondary source. Many students confused the word "primary" with the words "most important or main" in the one-on-one interviews.

Students also had trouble explaining why they selected a particular response. Fewer than a third (27%) were able to support their reasoning in selecting the main purpose of a website and only 15% were able to explain why they considered information on a website to be either fact or opinion. Students also had trouble identifying the author or sponsor of a particular website (only 29% could do this). They were also unable to list sources referenced in a website. Only 12% were able to locate a specific source. When asked directly, only 44% were able to articulate how to determine whether on not information contained on a website is reliable. These findings suggest the importance of a more sustained focus on this skill development area.

Table 4: Assessment Questions and Student Scores

Assessment Question	Pts. Received	Total Possible Pts.	% Pts. Received
How useful do you think this website will be for you in gathering information for your research paper?	232	406	57%
Who is the author and/or sponsor of this website?	352	812	29%
What is the MAIN purpose of the website?	690	1218	57%
Why did you choose the answer above (regarding the main purpose of the web site)?	333	1218	27%
Does the information in this website appear to be Opinion or Fact?	705	1218	58%
Why did you choose the answer above (regarding opinion or fact)?	187	1218	15%
Would the information on this website be considered primary source, secondary source, or a combination of those?	101	406	25%
List two sources used in this website	149	1218	12%
What is the best way to determine whether or not the information contained on a website is reliable (trustworthy)?	90	203	44%
Which of these three sites you have reviewed would be most appropriate to use for your assignment? Why?	66	203	33%

Thus, analysis of the overall results indicate the students in the experimental groups outperformed students in the control groups, suggesting the curriculum intervention was effective in helping students acquire skills in evaluating websites.

Although encouraging, the results from this pilot study should be viewed with some caution in mind. Technically, there was a significant difference between the students who received the intervention and those who did not. However, several factors must be considered.

1. Scores increased significantly for the experimental group of students, but the increase was slight (2 to 3 points increase). The highest post-

assessment mean score was 18.67 out of a total of 40 possible points. The scores do not reflect mastery of the content area – there is still a great deal of material that students do not grasp. This was reflected both quantitatively as well as in the one-on-one post interviews conducted by the research team.

2. The scores of the 9th grade control group students dropped from 16.06 to 13.43. One possible explanation for the drop may be the fact that the students were given the post-assessment at the very end of the school year (June 7th and June 8th) and may have been less invested in their performance by the time the test was administered. They may also have reacted negatively to being asked to re-take the same assessment after receiving no intervening instruction prior to the post-test.
3. The amount of material covered in the intervention and assessment was considerable yet the amount of time teachers spent on the content was small – between one and two hours in total. It was not clear from this pilot study the potential impacts of a longer intervention period.

Teachers' comments were also informative. The 6th and 9th grade teachers (experimental and control) reported that teaching students to evaluate materials on the web is not something they have generally included in their curriculum unless a student has questions or asks for help. Both 7th and 8th grade teachers (experimental and control) indicated that they spend a total of about 2.5 – 3 hours per year providing students with instruction on how to evaluate web resources.

Upon completion of the project, teachers expressed the need to have benchmarks for student knowledge of evaluation skills. Teachers revealed that the lack of direction for instruction resulted in varying degrees of exposure for the students, depending on the teacher's background and comfort level teaching those skills. Benchmarks for student knowledge would allow all teachers in the building to better understand specifically what they need to teach.

Lastly, while teachers supported the intervention and found it well designed, their comfort level in using it for the first time was low. They suggested that the technology integrationist be more closely involved in the initial classroom introduction.

Conclusions and Recommendations

The evidence gathered from this project suggests that on the whole, the project was successful. MSAD #54 was able to demonstrate that by providing students with instruction on how to evaluate digital resources, students did improve their skills in evaluating online materials. Thus, it was concluded that the pilot study was effective in demonstrating that the intervention could be effective in improving students' 21st Century Skills.

Given these preliminary results from this pilot study, several suggestions may be gleaned from the study design and findings for future work:

1. Extend the length of the intervention. The intervention took place over a very short period of time. It is recommended that the time period be extended to determine if the extent of the intervention may improve and sustain students' 21st Century Skills.
2. Review grade level of materials. The evidence from this pilot study indicated the intervention and/or assessments were not effective with 6th grade students. A review of the materials may reveal needed modification.
3. Explore expanding materials. Teachers indicated that the intervention materials would be even more useful to them if they were designed specifically for each teacher/level and subject area.
4. Create a common vocabulary. Teachers felt that common vocabulary across all grades for the skills/terms covered in the intervention would be very helpful.
5. Review the timing of the intervention. Introduce the skills early on in the school year so the skills are reinforced as the students engage in research activities for different content areas.

In summary, this pilot study has demonstrated the potential impact of interventions specifically designed to address 21st Century Skills. Furthermore, the pilot study has demonstrated the importance and feasibility of systematically developing curriculum interventions and collecting and analyzing impact data. Further research is encouraged to replicate and possibly extend the findings from this pilot study.

Post Pilot Study Actions

After completing the work with this project, school officials at SAHS began to put into place activities to further their initial work almost immediately. Teachers were surveyed in spring 2007 to determine their level of instruction around technology. The results were reviewed to distinguish if, when, and where technological skills were being taught and to determine if all students were receiving equal exposure (Table 5).

Table 5: Teacher Beliefs Regarding the Need for Teaching of Technological Skills

19. If you answered 'Yes' to Question 18, please choose the Internet skills you would like students to know and use:					
Internet Skills:	**Need Students to Know**	**Do Not Need Students to Know**	**I Do Not Know What This Is**	**Rating Average**	**Response Count**
Ethics and copyrights	96.4% (54)	3.6% (2)	0.0% (0)	1.04	56
Terms: URL, hosts/servers, sites, links, hypertext, protocol, download, FTP, freeware, shareware	83.3% (45)	14.8% (8)	1.9% (1)	1.19	54
Email: messages, forward, reply to, address book, attachments	90.6% (48)	9.4% (5)	0.0% (0)	1.09	53
Web browser: searching, note taking, copy & paste, special features	92.6% (50)	7.4% (4)	0.0% (0)	1.07	54
Search Engines: refining searches, types and uses	96.5% (55)	3.5% (2)	0.0% (0)	1.04	57
Evaluating and choosing best sites for use in given project	96.4% (54)	3.6% (2)	0.0% (0)	1.04	56

A meeting to discuss next steps was held in August 2007 and included the English department head, the technology integrationist, the business department head, and the building principal. At the meeting, attendees were briefed on the intervention structure. Discussions were held to determine the most effective way to communicate the intervention information to the entire

staff, with the long-term goal of integrating the intervention into their research teaching practices.

A presentation of the survey results and the intervention strategy took place at a full faculty meeting on October 1, 2007. The staff was briefed on the history of the intervention design as well as the format of the intervention itself.

The plan is for the intervention to be introduced initially in the Computer Applications class, in which all freshmen students are enrolled. They will gain the foundations in this setting and the skills will be reinforced in the content areas by those teachers.

The process of ensuring teacher use of the intervention and the corresponding student learning will begin with meetings between the technology integrationist, English department head, and content area teachers of freshmen. SAHS has teams of three teachers of freshmen in the areas of English, math, history, and science. Each team has 40 minutes of common planning time every other day. Meetings will take place during that planning time to discuss the specific research skills and topics that students are expected to learn as well as the appropriate time frame for teachers to use the intervention.

Appendix A

List of High Schools Participating in the ETS 2006 Early Administration:

- Canyon Del Oro – AZ
- Dublin High School *
- Nichols School – Buffalo, NY
- Nutley High School – NJ
- Oak Hill High School – ME
- Riverside High School *
- Skowhegan High School - ME
- Suffern High School – NY
- Tates Creek High School – KY

* The exact location of these schools is currently unknown.

Appendix B

Project timeline and tasks

Skowhegan Project 'To Do' List/Timeline

Task	Key Participants	Dates	√
1. Develop list of evaluation questions and objectives	Dorothy, Steve, Rick, CEPARE	Jan	
2. Invite content-area teachers to participate	SAHS & SAMS Admin.	Jan	
3. Create Assessment for pre and post test (timed) to measure the evaluation skills covered in the intervention (same assessment to be given for the pre and post test)	CEPARE	Jan/Feb	
a. Select topic and web sites for assessment (different topics for pre and post?)	Dorothy, Steve, Rick, CEPARE	Feb	
b. Pre-test the assessment instrument with a few 6th and 9th graders.	Skowhegan teacher	Feb	
c. Ask for student feedback on what was easy, hard or unclear. Review responses for possible question revision.	Dorothy	Feb	
4. Create documentation log for content-area teacher during project	CEPARE	Jan	
5. Invite content-area teachers to group meeting to provide overview of study and to begin work. Items to review include timeframe, documentation. Others? Discussion on best way to integrate intervention into curriculum in their classrooms.	Dorothy, Steve, Rick, CEPARE	Feb	
6. Some team members complete the assessment in order to be able to provide feedback	Project Team	Feb	
7. Develop intervention. (Project team and content teachers sign off on final intervention plan/materials).	Dorothy, Steve, Rick, teachers, CEPARE	Feb/Mar	
8. Interview participating teachers (control & experimental) to obtain background information about previous student work around evaluation skills as well as about current students in the experimental class	Rick	Feb	
9. Administer assessment (pre) to 6th, 8th and 9th graders	Skowhegan teachers	Mar	
a. Administer assessment to experimental class	Skowhegan teachers	Mar	
b. Administer assessment to control class	Skowhegan teachers	Mar	

10. Develop scoring rubric and score assessments. CEPARE to score assessments and prepare summary of results to share with team (but not with core-teachers until completion of post-assessment).	CEPARE	Mar	
11. Pre test Interview (and tape) several students from each grade to understand thought processes in doing the assessment.	CEPARE	April	
a. Need permission slips signed (IRB requirement)	Rick, Dorothy	Mar	
b. Develop interview guide.	CEPARE	Mar	
c. Identify interviewer(s).	Skowhegan teachers	Mar	
12. Create post intervention teacher interview protocol	Dorothy, Steve, Rick, CEPARE	Mar	
13. Content Teachers/others at SAHS/SAMS deliver intervention. (Content teachers to briefly document process each day for each class). CEPARE to observe (and tape?) several sessions.	Skowhegan teachers, Dorothy, Steve, others	April	
14. Create post intervention Student survey	CEPARE	Mar/April	
15. Administer assessment (post) to 6^{th}, 8^{th} and 9^{th} graders	Skowhegan teachers	May	
a. Administer assessment to experimental class	Skowhegan teachers	May	
b. Administer assessment to control class	Skowhegan teachers	May	
16. Post test Interview (and tape) same students from each grade who were interviewed after the pre test. To gain an understanding of how their thought processes may have changed.	CEPARE	May	
17. Conduct post-interview with teachers, both experimental & control.	Rick	May	
18. CEPARE to score assessments	CEPARE	May	
19. Prepare final report	CEPARE	July/Aug	

Appendix C

Intervention Teacher Guide and Resources

8/26/2007

To Use a Source or Not Use a Source, That is the Question!

MSAD 54 Evaluation of Resources Guide

You think you may have found a great site that may provide all the information you need in your research. The first thing we want you to remember is to always use more then one source in your research. The second thing we want you to remember is to ask yourself Three Essential Questions when you decide to use or not use the resource. This guide will help you ask and answer those questions as you make your decision.

The Three Questions

Does the content appear to be useful?
What is the Apparent Purpose?
How reliable is the information?

Does the content appear to be useful?

To determine a website's usefulness look it over and ask yourself the following;

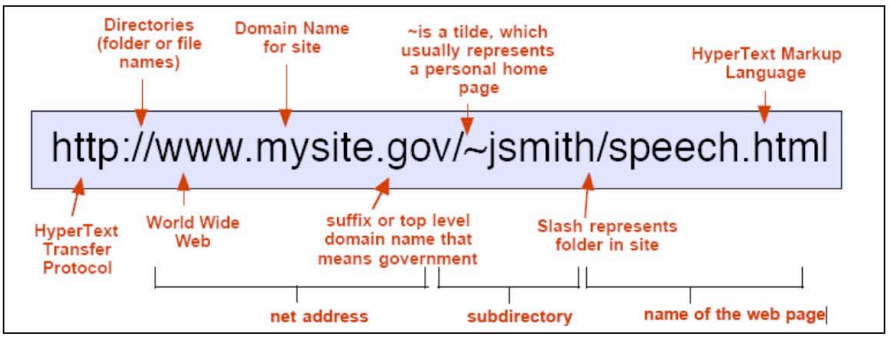
- Will this website be useful to my research?
- Will it help me answer my questions?
- How easy is it to use this site?

If you have decided the website provides useful information move on to the question of Purpose.

What is the Apparent Purpose?

Understanding Purpose or why the author(s) or sponsor created the site helps you determine how much you can rely on the site to give you reliable information.

1. Study the URL or **Uniform Resource Locator.** This is the address you type in, bookmark, or click on to get to a place on the Internet. This is similar to your home address and is where a page or site resides on the World Wide Web.



What type of domain does it come from? (educational, nonprofit, commercial, government, etc.) Is the domain appropriate for the content? • Government sites: look for .gov,.mil, .us, or other country code • Educational sites: look for .edu • Nonprofit organizations: look for .org • If from a foreign country, look at the country code and read the page to be sure who published it.	Look for appropriateness, fit. What kind of information source do you think is most reliable for your topic?
Is it somebody's personal page? Read the **URL*** carefully: Look for a personal name (e.g., *jbarker* or *barker*) following a tilde (~), a percent sign (%), or the words "users," "members," or "people." Is the server a commercial **ISP*** or other provider mostly of web page hosting (like aol.com or geocities.com)	Personal pages are not necessarily "bad," but you need to investigate the author very carefully. For personal pages, there is no publisher or domain owner vouching for the information in the page.
Is it published by an source that makes sense? Who "published" the page? In general, the publisher is the agency or person operating the "server" computer from which the document is issued. The server is usually named in first portion of the URL (between *http://* and the first /) Have you heard of this source before? Does it correspond to the name of the site? Should it?	You can rely more on information that is published by the source: Look for New York Times news from **www.nytimes.com** Look for health information from any of the agencies of the National Institute of Health on sites with **nih** somewhere in the domain name.

2. Looking at the author's affiliations and purpose.

Who wrote the page? Look for the name of the author, or the name of the organization, institution, agency, or whatever who is responsible for the page • An e-mail contact is not enough If there is no personal author, look for an agency or organization that claims responsibility for the page. • If you cannot find this, locate the publisher by truncating back the URL. Does this publisher claim responsibility for the content? Does it explain why the page exists in anyway?	**What are the implications?** Web pages are all created with a purpose in mind by some person or agency or entity. They do not simply "grow" on the web like mildew grows in moist corners. *You are looking for someone who claims accountability and responsibility for the content.* An e-mail address with no additional information about the author is not sufficient for assessing the author's credentials. *If this is all you have, try e-mailing the author and asking politely for more information about him/her.*
What are the author's credentials on this subject? Does the purported background or education look like someone who is qualified to write on this topic?	Anyone can put anything on the web for pennies in just a few minutes. Your task is to distinguish between the reliable and questionable.
What do others say about the author or responsible authoring body?	"Googling someone" can be revealing. Be sure to consider the source. If the viewpoint is radical or controversial, expect to find detractors. Think critically about all points of view.

How Reliable Is The Information?

Is the page dated? Is it current enough?
Is it "stale" or "dusty" information on a time-sensitive or evolving topic? **CAUTION:** Undated factual or statistical information is no better than anonymous information. Don't use it.

How recent the date needs to be depends on your needs. For some topics you want current information. For others, you want information put on the web near the time it became known. In some cases, the importance of the date is to tell you whether the page author is still maintaining an interest in the page, or has abandoned it.

Primary Vs. Secondary Sources
Primary sources are the "materials on a topic upon which subsequent interpretations or studies are based, anything from firsthand documents such as poems, diaries, court records, and interviews to research results generated by experiments, surveys, ethnographies, and so on."*

Primary sources are records of events as they are first described, without any interpretation or commentary. They are also sets of data, such as census statistics, which have been tabulated, but not interpreted.

Secondary sources, on the other hand, offer an analysis or a restatement of primary sources. They often attempt to describe or explain primary sources. Some secondary sources not only analyze primary sources, but use them to argue a contention or to persuade the reader to hold a certain opinion.

	Primary Source	Secondary Source
Art	Original artwork	Article critiquing the piece of art
History	Slave diary	Book about the Underground Railroad
Literature	Poem	Treatise on a particular genre of poetry
Political Science	Treaty	Essay on Native American land rights
Theatre	Videotape of a performance	Biography of a playwright

Are sources documented with footnotes or links?

- Where did the author get the information?
  As in published scholarly/academic journals and books, you should expect documentation.
- If there are links to other pages as sources, are they to reliable sources?
- Do the links work?

In scholarly/research work, the credibility of most writing is proven through footnote documentation or other means of revealing the sources of information. Saying what you believe without documentation is not much better than just expressing an opinion or a point of view. What credibility does your research need? An exception can be journalism from highly reputable newspapers. But these are not scholarly. Check with your instructor before using this type of material. Links that don't work or are to other weak or fringe pages do not help strengthen the credibility of your research.

If reproduced information (from another source), is it complete, not altered, not fake or forged?
Is it retyped? If so, it could easily be altered.
Is it reproduced from another publication?
Are permissions to reproduce and copyright information provided? Is there a reason there are not links to the original source if it is online (instead of reproducing it)?

You may have to find the original to be sure a copy of something is not altered and is complete. Look at the URL: is it from the original source? If you find a legitimate article from a reputable journal or other publication, it should be accompanied by the copyright statement and/or permission to reprint. If it is not, be suspicious.

Barker, Joe. "Evaluating Webpages." Finding Information on the Internet. March 22, 2005. University of California.. 18 Mar 2007 <http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Evaluate.html>.

"Anatomy of a URL." Vol 326 Issue 1"2004" 1-2. 3-18-07 <http://www.my-ecoach.com/guides/>.

Cardwell, Catherine . "Primary Vs. Secondary Sources." Library Instruction. 1999-2005. Bowling Green State University. 18 Mar 2007 <http://www.bgsu.edu/colleges/library/infosrv/lue/primary.html>.

MSAD #54 Website Evaluation Checklist — Teacher Guide

This well-known cartoon by Peter Steiner ("On the internet, nobody knows you're a dog.") illustrates an important point relating to online research; there are a lot of "dogs" out there posing as legitimate sources of information. The MSAD #54 Website Evaluation Checklist is a tool created to help students develop strategies for critically evaluating online information resources by asking three key questions:

1 - Does the content of the site appear to be useful?
2 - What is the site's apparent purpose?
3 - How reliable is the information?

This Teacher Guide is an instructional companion piece designed to help you teach the requisite skills. An online version of this form and web-based examples may be found at:

Note: The cartoon is reproduced from the July 5, 1993 issue of The New Yorker, only for academic discussion, evaluation, and research, and complies with federal copyright law as defined and stipulated under Title 17 U. S. Code.

➡ General Information

Your Name:
Research topic/question:

➡ Quick Scan

A "Quick Scan" helps students decide, in just a few moments, whether a given website has potential value. A "yes" answer here means students should continue the evaluation, and a "no" means they should search for another site.

Can you read and understand the text on this page? yes | no

A literacy piece — students should be able to read and comprehend at least 85% of the text on a given page. If they cannot, then they may miss important context clues that bear on the reliability of the content.

Does this page contain information you might use? yes | no

Another literacy piece —assuming an adequate level of general comprehension, students should be able to scan the text for potentially useful information.

Is the information current enough for your purposes? yes | no

Students must first decide whether a given piece of information is time-sensitive, and what would be an acceptable level of currency. Scan the page for "Last update" information. Other references should note publication dates.

➡ Site Analysis

Site Name:

The site name is NOT the same as the URL. It will usually be found in a banner or heading at the top of the page.

URL:

URL stands for "Universal Resource Locator," generally known as a web address. Web addresses themselves contain a good bit of useful information regarding the sources of the material and potential biases and agendas (institutional or personal) that may impact the overall reliability of the information found on a given site. The diagram on the last page describes in more detail how to "read" a web address.

Domain name:

Domain names are usually chosen only for their name recognition value. It is the first thing a search engine scans for. Site developers acquire domain names by simply buying the rights to them, often trapping the unwary web surfer with a benign-sounding URL. In one of the more egregious examples of this ploy, the domain name "martinlutherking.org" is owned by a white supremacist group.

Extension:

Extensions provide clues about the organizational roots of a website: government-sponsored sites contain .gov, military sites contain .mil, educational institutions .edu, non-profit organizations .org, and so on. The chart on the last page contains a more comprehensive list of extensions and their common affiliations.

Page name:

On most websites, the page name appears at the very top of the browser window. It will also appear as the very last item in the URL, typically followed by the suffix .html or .htm.

Site sponsor and/or author:

The sponsor may be identified in the domain name itself, or elsewhere on the first (index) page. The author may be solely responsible for the content, or may be an agent of the sponsoring organization. Information from established, responsible, institutional sources is generally reliable, but may reflect institutional biases. Be wary of the "sponsored links" that appear prominently on most search result pages. These almost always exist to sell you something.

Is this a personal page? yes | no | unsure

As the diagram illustrates, a tilde (~) is a good indicator you're looking at a personal page. Other clues include percent signs (%) and such words as "users," "members," "people," and so on. Using information from a personal page is not necessarily a bad thing, but you need to examine the content carefully. It's wise to research the author's credentials and to cross-check personal page information with other resources.

Explain your reasoning:

How can you justify this claim? What cues can you find in the URL or elsewhere on the page?

The main purpose of this website is to:

supply information | provide a service | state an opinion | sell a product | entertain | unsure

Most websites do have a primary focus, and information found there will be presented in ways that support that focus. Since the purpose of online research is to obtain information, websites whose primary focus is something other than supplying information must be more carefully screened for biases that reflect that focus. Consumer Reports and the Ford Motor Company may both have similar information on the latest Ford pickup trucks, but their slants will differ.

Explain your reasoning:

How can you justify this claim? What cues can you find in the URL or elsewhere on the page?

➨ Content Analysis

Given the results of your site analysis, how might this information be biased?

Unless we're dealing with simple facts (When is your birthday? What's the chemical formula for water?) we can assume that most of what we read is biased to some extent. If students are aware of the mechanisms through which the information they are seeking has been filtered, they'll make better judgments about its usefulness for their purposes.

The relevant information on this site is: primary source | secondary source | both

A primary source is a document which describes an event by its witnesses or first recorders. Some types are: diaries, speeches, letters, interviews, newspapers, autobiographies and official records including government publications, legislation, court reports, etc. Secondary sources are one step removed from the event being described, but can provide background for or clarification of primary sources. Some types are: textbooks, journal articles, histories, criticisms, commentaries, and encyclopedias.

Are additional sources of information provided? yes | no

These may consist of links to other online resources or bibliographic references to print materials. Their very presence on the page indicates that the author is making some attempt to validate his/her claims. You should examine these to verify that links work and that other reference materials do in fact exist.

If "yes," list two or three sources you might use.

The number and type of referenced resources your students consult depends on the degree of rigor you expect, but students should definitely check the content of at least two of these sources to see if they truly support claims made on the original site.

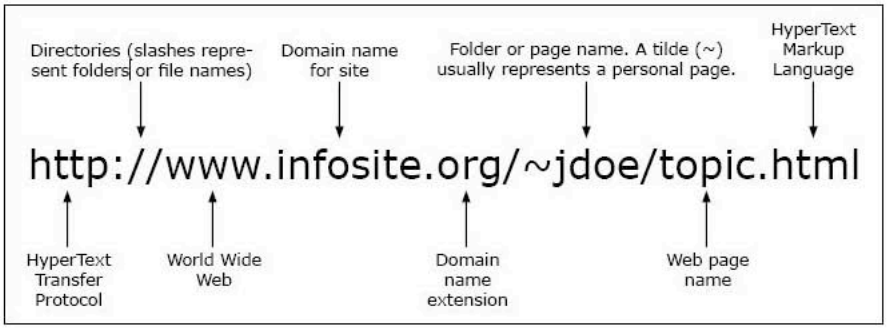
How much useful information did you find here? just a little | quite a bit | all I need

This depends largely on the type of information sought. Answers to the question, "Why did Hitler want to eradicate the Jews?" will require more in-depth analysis than "How many Jews died in the Holocaust?"

Rate the quality of the information on this site: poor | adequate | good | excellent

The information gathered to this point in the evaluation provides the raw material for making these judgements. Is the originating domain one that is likely to contain good information on topics of this sort? Is the site sponsor generally reputable? Do the author's credentials inspire confidence? Is the writing clear and unambiguous? Is there evidence of bias? Is the information verifiable? Is it current enough to be useful? Do referenced materials support the author's claims? Are these materials themselves credible? If all of this checks out, you've probably found a reliable resource.

➡ Reading a URL



Truncating a URL can provide insights into the nature of the entity sponsoring a website. To do this, simply delete all text following the domain name extension and reload the page. In the example shown above, the truncated URL would read:

http://www.infosite.org/

➡ Common Domain Name Extensions

For a more comprehensive list, including country extensions, visit:
http://www.computeruser.com/resources/dictionary/noframes/nf.domains.html

.ac — educational network (same as .edu)
.biz — business
.com — commercial site in the US
.edu — educational site in the US
.firm —business
.gov — U.S. government
.int — international institution
.mil — U.S. military
.nato — NATO site
.net — administrative site in the US
.nom — personal site
.org — organization in the US
.store — retail business
.web — about the World Wide Web

MSAD #54 Website Evaluation Checklist

Instructions: Circle the appropiate response where choices are provided. Answer all other questions as best you can. In the Quick Scan section, a "yes" answer means you should continue with this evaluation, and a "no" means you should search for a more useful website.

➨ General Information

Your Name:
Research topic/question:

➨ Quick Scan

Can you read and understand the text on this page? yes | no
Does this page contain information you might use? yes | no
Is the information current enough for your purposes? yes | no

---

➨ Site Analysis

Site Name:
URL:
Domain name:
Extension:
Page name:
Site sponsor and/or author:
Is this a personal page? yes | no | unsure
Explain your reasoning:

The main purpose of this website is to:
supply information | provide a service | state an opinion | sell a product | entertain | unsure
Explain your reasoning:

➨ Content Analysis

Given the results of your site analysis, how might this information be biased?

The relevant information on this site is: primary source | secondary source | both
Are additional sources of information provided? yes | no
If "yes," list two or three sources you might use.

How much useful information did you find here? just a little | quite a bit | all I need
Rate the quality of the information on this site: poor | adequate | good | excellent

Appendix D

Pre-and Post Assessment

ICT Research Project

Untitled Page

Dear Student: Skowhegan Area Elementary, Middle School and High School are working to improve your 21st Century Skills. In order to strengthen your Information Communication Technology (ICT) Literacy skills, we have asked the Center for Education Policy, Applied Research, and Evaluation (CEPARE) at the University of Southern Maine to help create a project that will offer you the chance to improve your online research skills.

The following assessment will help us to understand your abilities in the area of evaluating the usefulness of online information. We will ask you to answer all the questions as they relate to each of three websites provided. None of the information collected here will in any way affect your grade or your relationship with the Skowhegan school system. You are not required to participate in this study if you do not wish to. Your honest responses to the questions on this assessment will be helpful and provide you the opportunity to contribute to the current knowledge about the process for teaching evaluation skills using digital media and in so doing effect possible positive change to classrooms throughout MSAD 54.

There is no direct foreseeable risk for participating in this study. Your individual responses will be seen only by the evaluation team at CEPARE. Involvement in this study is completely voluntary. Reports will not include any information that will make it possible to identify a participant. In any sort of quotation we will use, we will not include any information that will make it possible to identify the student being quoted.

If you have any questions about this project you may reach the CEPARE evaluation team at (207)780-5044 or by email at cepare@usm.maine.edu. If you have questions about your rights as a research subject, you may contact: Director, Office of Research Compliance, University of Southern Maine at (207)780-4268 or by email at usmirb@maine.edu.

Thank you for being willing to participate in this important project.

Sincerely,

Dorothy Small
Superintendent, MSAD 54

ICT Research Project

Untitled Page

Please enter you name, today's date, grade level, and teacher's name in the spaces provided.

First and Last Name

Please enter today's date (for example, 3/12/07)

Today''s Date MM / DD / YYYY

What grade are you in?

Teacher name

ICT Research Project

Scenario: You have been assigned an Internet research project. The project is about nutrition, and your assignment is to create a 7-day menu of nutritious, balanced meals. You will use information that you collect from the Internet to create your menu.
Your task today: Look at each of three websites (one at a time) and answer the survey questions about each site. You will be asked to evaluate each site and determine how useful it will be in creating your 7-day menu.
You will need to answer the survey questions and look at the website at the same time. To do this, simply click on a website to open a new window. This will allow you to look at the survey questions in one window and the website you are evaluating in another window.
You may need to resize and/or move both windows in order to look at them at the same time. If you have problems looking at the website and the survey at the same time, please ask your teacher for assistance.
And remember, DO NOT CLOSE THE SURVEY WINDOW AT ANY POINT OR YOUR ANSWERS WILL BE LOST. You may, however, close the different website windows. You must answer all of the questions on each page in order to move to the next page.

ICT Research Project

Website #1

Website #1 - The Egg Nutrition Center
click above link to access site

Remember: your assignment is to determine if this website would be a good source of information for your project creating a 7-day menu of nutritious, balanced meals.

1. How useful do you think this website will be for you in gathering information for your research paper?

- ◯ None or very little of it is relevant (useful) to my topic
- ◯ Some of it is relevant (useful) to my topic
- ◯ All or almost all of it is relevant (useful)

2. Who is the author and/or sponsor of this website?

3. What is the MAIN purpose of the website? Are the authors trying to:

- ◯ Inform the reader
- ◯ Persuade the reader
- ◯ Entertain the reader
- ◯ Sell something to the reader
- ◯ Other (please specify)

4. Why did you choose the answer above?

5. Does the information in this website appear to be Opinion or Fact?

- ◯ All opinion
- ◯ Mostly opinion and some fact

ICT Research Project

- ◯ Mostly fact and some opinion
- ◯ All fact

6. Why did you choose the answer above?

7. How current (up-to-date) is the information contained on this website?

- ◯ Most/all of it is current
- ◯ Some of it is current
- ◯ Not current but still usable
- ◯ Not current and not usable
- ◯ Do not know

8. Would the information on this website be considered primary source, secondary source or a combination of those?

- ◯ Primary source
- ◯ Secondary source
- ◯ Combination of primary and secondary sources
- ◯ Do not know

9. List two sources used in this website (if you do not know what the sources are, please type "do not know" in the space provided).

a)

b)

ICT Research Project

Website #2

Website #2 - Shape Up America!
close website #1 and click above link to access website #2

Remember: your assignment is to determine if this website would be a good source of information for your project creating a 7-day menu of nutritious, balanced meals.

10. How useful do you think this website will be for you in gathering information for your research paper?

- ◯ None or very little of it is relevant (useful) to my topic
- ◯ Some of it is relevant (useful) to my topic
- ◯ All or almost all of it is relevant (useful)

11. Who is the author and/or sponsor of this website?

12. What is the MAIN purpose of the website? Are the authors trying to:

- ◯ Inform the reader
- ◯ Persuade the reader
- ◯ Entertain the reader
- ◯ Sell something to the reader
- ◯ Other (please specify)

13. Why did you choose the answer above?

14. Does the information in this website appear to be Opinion or Fact?

- ◯ All opinion
- ◯ Mostly opinion and some fact

- ◯ Mostly fact and some opinion
- ◯ All fact

15. Why did you choose the answer above?

16. How current (up-to-date) is the information contained on this website?

- ◯ Most/all of it is current
- ◯ Some of it is current
- ◯ Not current but still usable
- ◯ Not current and not usable
- ◯ Do not know

17. Would the information on this website be considered primary source, secondary source or a combination of those?

- ◯ Primary source
- ◯ Secondary source
- ◯ Combination of primary and secondary sources
- ◯ Do not know

18. List two sources used in this website (if you do not know what the sources are, please type "do not know" in the space provided).

a)

b)

ICT Research Project

Website #3

Website #3 - Nutrition for a Living Planet
close website #2 and click above link to access website #3

Remember: your assignment is to determine if this website would be a good source of information for your project creating a 7-day menu of nutritious, balanced meals.

19. How useful do you think this website will be for you in gathering information for your research paper?

- ◯ None or very little of it is relevant (useful) to my topic
- ◯ Some of it is relevant (useful) to my topic
- ◯ All or almost all of it is relevant (useful)

20. Who is the author and/or sponsor of this website?

21. What is the MAIN purpose of the website? Are the authors trying to:

- ◯ Inform the reader
- ◯ Persuade the reader
- ◯ Entertain the reader
- ◯ Sell something to the reader
- ◯ Other (please specify)

22. Why did you choose the answer above?

23. Does the information in this website appear to be Opinion or Fact?

- ◯ All opinion
- ◯ Mostly opinion and some fact

- ◯ Mostly fact and some opinion
- ◯ All fact

24. Why did you choose the answer above?

25. How current (up-to-date) is the information contained on this website?

- ◯ Most/all of it is current
- ◯ Some of it is current
- ◯ Not current but still usable
- ◯ Not current and not usable
- ◯ Do not know

26. Would the information on this website be considered primary source, secondary source or a combination of those?

- ◯ Primary source
- ◯ Secondary source
- ◯ Combination of primary and secondary sources
- ◯ Do not know

27. List two sources used in this website (if you do not know what the sources are, please type "do not know" in the space provided).

a)

b)

ICT Research Project

Comparison

Please open each of the websites you have looked at (linked below). The computer will allow you to have all of the websites open at the same time as well as the survey. Look at each of the websites, either separately or all together, one more time and consider the following questions.

The Egg Nutrition Center

Shape Up America!

Nutrition for a Living Planet

28. What is the best way to determine whether or not the information contained on a website is reliable (trustworthy)?

29. Which of the three sites you have reviewed would be most appropriate to use for your assignment? Why?

Appendix E

Websites used for pre-and post-assessments:

Website #1: The Egg Nutrition Center
http://www.enc-online.org/

Website #2: Shape Up America!
http://www.shapeup.org/

Website #3: Nutrition for a Living Planet
http://www.diet-and-health.net/

Appendix F

Student Interview Questions (pre & post)

1. How easy or hard did you find the survey? Was it easy, hard, or in the middle? [Probe]

2. You said that _____ (none, some, all) of the information on this website was relevant or useful to your topic. What did you see that you felt was useful? What did you see that you felt wasn't going to be useful?

3. You indicated that the MAIN purpose of the website was _____ (persuade, inform, sell). Can you tell me a little bit more about that?

4. You said that the information on the website was _____ (fact/opinion). Can you tell me more about that?

5. On the survey you indicated that _____ (most/some/not current by usable/unusable). How did you know?

6. You said the information on the site was _____ (primary, secondary source). What specifically did you see on the site that indicated it was a primary/secondary source?

Repeat questions 1-6 for each of the three websites.

7. When you use the Internet to do research for a class assignment, what steps do you take to find information to use for your assignment? (Have student walk you through the process they use).

8. Imagine that you went to the Internet and found a really good site for your project – you felt like you hit the jackpot. Tell me the characteristics that a site would have that would make it so perfect.

9. Often times when you use a search engine, many, many sites come up. How do you know which ones are worth looking at?

10. How do you know if the information you find is reliable or truthful? [Probe] Are there any other ways you can tell?

Appendix G

Teacher Interview Questions (pre)

1. Years of teaching experience:
    a. Total years
    b. Years teaching current subject

2. How much time have you spent on teaching evaluation skills (per year) prior to this study? (provide the list of skills we're covering – determining usefulness, reliability, etc.)

3. What strategies have you used in the past to teach students evaluation skills? What has worked well, not so well? Please describe.

4. In the past, what obstacles have you seen students face when confronted with the task of evaluating websites when doing research on the Internet?

5. Overall, what are your impressions of students' ability to evaluate sources at the beginning of the year well as at the end of the year? In other words, in your experience, how do students' evaluation skills change during grade (6), (8), (9)?

Teacher Interview Questions (post)

1. How much time (hours) did you spend doing the intervention with your students?

2. What were your general impressions of the intervention?
    a. What are the strengths of the intervention?
    b. What could be improved about the intervention?

3. Were there any surprises for you throughout the process of this project?

4. Using a scale of 1 to 10 where 1 is "not at all knowledgeable" and 10 is "completely competent", how would you rate your students' skill level in evaluating websites prior to the intervention vs. post-intervention?
    a. If there was a lot of movement – why?
    b. If there was little movement – why?

5. If there are students who still need more work developing these skills, what do you feel they need? (What can be done to help them further?)

6. How good of a match do you think there was between the intervention and the assessment? Why do you say that (please be as specific as possible)?

Appendix H

ICT Research Project – Post Assessment
Scoring Rubric

Website #1

1. How useful do you think this website will be for you in gathering information for your research paper?

1 point	0 points
• Some of it is relevant (useful) to my topic	• None or very little of it is relevant (useful) to my topic • All or almost all of it is relevant (useful)

2. Who is the author and/or sponsor of this website?

1 point	0 points
• Egg Nutrition Center	• Anything else

3. What is the MAIN purpose of the website? Are the authors trying to:

2 points	1 point	0 points
• Persuade the reader	• Inform the reader	• Entertain the reader • Sell something to the reader • Other

4. Why did you choose the answer above? (Examples of responses)

2 points	1 point	0 points
• Because the author attempts to persuade the reader into believing eggs are nutritious, delicious, & affordable	• Website states that its target audience is egg lovers, egg producers/ processors, and health care providers who want to learn more about how eggs contribute to a healthy diet	• Because this website is for egg lovers and it is supposed to entertain them

5. Does the information in this website appear to be Opinion or Fact?

2 points	1 point	0 points
• Mostly fact and some opinion	• Mostly opinion and some fact	• All opinion • All fact

6. Why did you choose the answer above? (Examples of responses)

2 points	1 point	0 points
• Because they are saying things that are true, but they also say what they think about the eggs	• Because it mostly states what they think of eggs. The other part is fact because they're trying to give you information on the subject so that you'll get an interest and join their site	• Because there aren't any facts on this page • Because it has no opinions

8. Would the information on this website be considered primary source, secondary source or a combination of those?

1 point	0 points
• Combination of primary & secondary sources	• Primary source • Secondary source • Other/ do not know

9. List two sources used in this website

- 1 point for each listed credible source

Website #2

10. How useful do you think this website will be for you in gathering information for your research paper?

1 point	0 points
• Some of it is relevant (useful) to my topic	• None or very little of it is relevant (useful) to my topic • All or almost all of it is relevant (useful)

11. Who is the author and/or sponsor of this website?

1 point	0 points
• Shape Up America • C Everett Koop	• Anything else

12. What is the MAIN purpose of the website? Are the authors trying to:

2 points	1 point	0 points
• Inform the reader	• Persuade the reader	• Entertain the reader • Sell something to the reader • Other

13. Why did you choose the answer above? (Examples of responses)

2 points	1 point	0 points

• They are trying to inform the reader of obesity as a health issue and to provide responsible information on healthy weight management	• Trying to persuade the reader to lose more weight and eat right	• Because they are trying to sell a cookbook

14. Does the information in this website appear to be Opinion or Fact?

2 points	1 point	0 points
• Mostly fact and some opinion	• Mostly opinion and some fact	• All opinion • All fact

15. Why did you choose the answer above? (Examples of responses)

2 points	1 point	0 points
• The information presented appears factual, though not much of it cites source material… any opinions expressed on this site are very closely tied to this (apparently) factual information	• Because they are trying to tell you what diets are the most healthy, and they have surveys as fact to prove it	• Because it's all opinion • Based on fact with some generalizations

18. List two sources used in this website

- 1 point for each listed credible source

Website #3

20. Who is the author and/or sponsor of this website?

2 points	1 point	0 points
• Author/ sponsor is not listed	• DietandHealth.Net	• Other

21. What is the MAIN purpose of the website? Are the authors trying to:

2 points	1 point	0 points
• Inform the reader	• Persuade the reader	• Entertain the reader • Sell something to the reader • Other

22. Why did you choose the answer above? (Examples of responses)

2 points	1 point	0 points

• Because they are informing you about what you can do to keep yourself healthy	• To persuade the reader to make us eat better	• They are trying to get you to think their product is good

23. Does the information in this website appear to be Opinion or Fact?

2 points	1 point	0 points
• Mostly fact and some opinion	• Mostly opinion and some fact	• All opinion • All fact

24. Why did you choose the answer above?

2 points	1 point	0 points
• There are facts about what you can do to stay healthy, and there is opinion about what foods and exercises are most effective	• Because they have things that are suggested, which means that it isn't complete fact, with mostly opinions	• I choose that because it seems like all fact • I think it is all opinion because people were telling you things from their point of view

26. Would the information on this website be considered primary source, secondary source or a combination of those?

1 point	0 points
• Combination of primary & secondary sources	• Primary source • Secondary source • Other/ do not know

27. List two sources used in this website

- 1 point for each listed credible source

Comparisons

28. What is the best way to determine whether or not the information contained on a website is reliable (trustworthy)?

- 1 point for at least 1 credible method

29. Which of these three sites you have reviewed would be most appropriate to use for your assignment? Why?

- 1 point for listing a site & a credible reason for selecting that site