WEB SITE CREDIBILITY AND TEACHERS' EVALUATIONS OF EDUCATIONAL WEB SITES THAT PRESENT GLOBAL CITIZENSHIP CURRICULUM

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By
Jeffrey Kent

Thesis Committee:
Jonathan Lillie Ph.D., Chairperson
Ann Auman Ph.D.
Richard Johnson Ed.D.
We certify that we have read this thesis and that, in our opinion, it is satisfactory in scope and quality as a thesis for the degree of Master of Arts in Communication.

THESIS COMMITTEE

[Signatures]

Chairperson
ABSTRACT

Based on B.J. Fogg and the Stanford Persuasion Technology Lab’s research on Web site credibility and Prominence-Interpretation Theory (2003), this exploratory study asked kindergarten through twelfth grade teachers in the United States to participate in an on-line survey. The on-line survey asked the teachers to view six educational Web sites that presented curriculum on Global Citizenship for teachers. The Web sites were designed by the National Geographic Society, Oxfam U.K., the Smithsonian Institute, the United Nations, the U.S. Peace Corps, and the World Bank. The on-line survey then asked the teachers to compare, rate, and comment on the Web sites’ credibility.

This exploratory study then examined the relationships between the demographic characteristics of teachers and their evaluations of credibility for the six Web sites. This study also examined the relationships between the teachers’ need for information and their evaluations of credibility for the six Web sites.

Other factors that were not found on these Web sites were explored to examine if they might lead to a higher level of Web site credibility for educational Web sites that present curriculum on Global Citizenship for teachers. This study also probed teachers’ opinions on the types of resources they wanted to be provided with by these types of educational Web sites.

The results of this exploratory study were able to show that credibility might be viewed in stages instead of unilaterally. The study also showed, in the assessment of a Web site’s credibility, that design factors not seen on a Web site have the potential to be just as critical as design factors that are seen.
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CHAPTER 1. INTRODUCTION

Statement of the Problem

In 1928, William Carr wrote in his book *Education for World-Citizenship* that, “Everyone will agree that the purpose of education is to increase the welfare of mankind” (p. 3). In the following pages he laid out his desire for teaching world citizenship throughout every school and subject taught in the United States. This educational pedagogy focused on the combined subjects of history, geography, and civics education taught from a local perspective to a world perspective (Carr, 1928).

Now eighty years later, 189 governments of the world are seven years away from trying to reach their eight millennium goals for 2015 set forth by the United Nations Millennium Project. The eight Millennium Development Goals for 2015 are; (a) eradicate extreme poverty and hunger, (b) achieve universal primary education, (c) promote gender equality and empower women, (d) reduce child mortality, (e) improve maternal health, (f) combat HIV/AIDS, malaria, and other diseases, (g) ensure environmental sustainability, and (h) a global partnership for development (The United Nations, 2005, p. 3). If these goals can be achieved by the nations of the global community, the United Nations believes it can change the lives of hundreds of millions of citizens of the world that live in poverty devoid of basic human rights and help them to “live healthy and dignified lives” (The United Nations, 2005, p. 1).

To help educate the public about these goals and other human rights issues, the United Nations has developed a Web site called the United Nations Cyber School Bus. ([www.un.org/cyberschoolbus/index.shtml](http://www.un.org/cyberschoolbus/index.shtml)). The Web site is devoted to providing teachers with resources and curriculum that will help them teach their students about the world in
which they live. What was pushed by Carr in 1928 as “world citizenship” is now the United Nations’ way of promoting the principals of what the international aid organization Oxfam calls “Global Citizenship Education” (Oxfam, 2006). The teaching of global citizenship is still being defined as of this research but its tenets rest in the ideals of teaching civics education combined with knowledge about human rights on a global scale. Although a complex subject to define, this subject is still best exemplified by Carr’s (1928) three core subjects—history, geography, and civics education taught from a local to world perspective. The underlying question for this exploratory study is to examine if Web sites that provide curriculum on Global Citizenship Education are effective in persuading teachers to use their curriculum and resources.

The seminal work of B.J. Fogg and the Persuasive Technology Lab at Stanford University (Fogg, Marshall, Othman, et al., 2001) has focused on one paradigm to increase a Web site’s design to become more persuasive. They believe that Web site credibility is the single most important aspect that affects whether or not a person will use a Web site’s information. They believe with the advent of so many new Web sites that provide consumers with false and misleading information, it is important for Web site designers to create Web sites that are rated as high, in terms of their level of credibility. To support this claim they have initiated many studies, both quantitative and qualitative, that examine Web site credibility.

Utilizing B.J. Fogg’s (2003) Prominence-Interpretation Theory that states, for a person to judge a Web site’s credibility, first he or she has to notice something (prominence), then they have to evaluate what they noticed (interpretation). If one or the other does not happen, then there is no credibility assessment (p. 722). I modeled my
study on their largest experiment to date (Fogg, Soohoo, Danielson, et al., 2003) with over 2,500 participants, that was done jointly with the Stanford, Tauber, Fogg, and Marable (2002) study. The Fogg et al. (2003) research focused on consumers' assessments of credibility for ten different consumer Web sites. The Stanford et al. (2002) research focused on two sets of experts (health and business) and their opinions of the Web sites' credibility compared to the Fogg et al. (2003) participants' opinions of the Web sites' credibility.

The Fogg et al. (2003) study, coupled with the Stanford et al. (2002) study, showed an important finding: that experts and average consumers utilized different levels of user experience and user needs (Fogg, B.J., Tseng, H., 1999) when assessing Web site credibility. My study tried to model these two studies to explore if teachers use different levels of user experience and user needs, when they use educational Web sites that present curriculum on Global Citizenship.

This exploratory study will provide Global Citizenship Web site designers a more focused approach, which will help them create higher quality Web sites. This will help teachers in an evolving global world become more connected to sources on citizenship from around the world. This in turn will help students in the United States to prepare themselves for their role as global citizens.

Objective

This exploratory study examined what teachers are looking for when they judge the credibility of an educational Web site that provides curriculum on Global Citizenship. Based on B.J. Fogg and the Stanford Persuasion Technology Lab's research (2003) on Web site credibility and Prominence-Interpretation Theory, this exploratory study asked
kindergarten through twelfth grade teachers in the United States to participate in an on-line survey. The teachers were sent an e-mail to solicit their participation. Responses came from 30 of the 50 United States. The collection method was a Quasi-Convenient/Snowball sampling, whereby teachers were contacted and asked to forward the link of the survey to other teachers they knew. The on-line survey asked the teachers to view six educational Web sites that presented curriculum on Global Citizenship for teachers. The Web sites were designed by the National Geographic Society, Oxfam U.K., the Smithsonian Institute, the United Nations, the U.S. Peace Corps, and the World Bank. The on-line survey then asked the teachers to compare, rate, and comment on the Web sites’ credibility. These comments (N=129) were then coded into Fogg’s et al. (2003) 18 credibility categories. These categories were then used to examine RQ1 and RQ2 as they are detailed below.

RQ1 examined the relationships between the demographic characteristics of teachers and their evaluations of credibility for the six Web sites. RQ1 asked, “What are the relationships between the demographic characteristics of the teachers in terms of (a) grade level, (b) subject area taught, (c) gender, (d) teaching experience and their evaluation of credibility for educational Web sites that present curriculum on Global Citizenship for teachers?” This question explored the relationship between the teacher’s user experience, by way of his or her demographic characteristics, and his or her evaluations of the Web sites’ credibility.

RQ2 examined the relationships between the teachers’ need for information and their evaluations of credibility for the six Web sites. RQ2 asked, “What are the relationships between teachers’ need for information in terms of their (a) overall
curriculum used from web sites, (b) desire to use curriculum, (c) time spent viewing Web sites and their evaluation of credibility for educational Web sites that present curriculum on Global Citizenship for teachers?” This question examined the relationship between the teachers’ need for information and their evaluations of the Web sites’ credibility.

RQ3 examined if factors that were not found on these Web sites might lead to a higher level of Web site credibility for educational Web sites that present curriculum on Global Citizenship for teachers. RQ3 looked at Fogg’s (2003) Prominence-Interpretation Theory, which posits that two things happen when a person evaluates a Web site’s credibility. “First, they notice something on the Web site (prominence), then they make a judgment about that element (interpretation).” However, this theory assumes that, “If the element is not noticed, it will have no impact on the credibility assessment of the site” (p. 722). What if a teacher is looking for something specific on the Web site (i.e. standards based curriculum)? If that teacher visits an educational Web site and the curriculum is not standards based, it might be possible that the teacher noticed something that was missing and still made a credibility assessment. RQ3 was designed for the purpose of qualitative data collection. In the form of an open-ended question the teachers were asked, “What design factors do you believe will add credibility to Web sites that present curriculum on Global Citizenship for teachers?”

Finally for RQ4, this exploratory study probed teachers’ opinions on the types of resources they wanted to be provided with by educational Web sites that present curriculum on Global Citizenship. RQ4 asked, “What types of resources do teachers want from Web sites that present curriculum on Global Citizenship for teachers?” With this question, I was exploring what types of resources teachers wanted to see on
educational Web sites that present curriculum on Global Citizenship, thus possibly this would help to increase their credibility indirectly.

Significance of Study

The significance of this study is three-fold. First, with the 2015 Millennium Goals target deadline fast approaching, it is critical that organizations like the United Nations, present curriculum on Global Citizenship that reaches and educates a wide audience with its message. One of the very best ways to do this is through teachers. This study has the potential to aid its Web site designers and future educational Web site designers in creating on-line content that is both meaningful and credible, thus it will help teachers mold the next generation of civic minded citizens.

Secondly, this study was designed to take the Fogg et al. (2003) research and the Stanford et al. (2002) research one step further and explore whether or not there is a significant difference in how experts view Web site credibility based on their unique user experiences and user needs. It is also the first study that questions the role of prominence and non-prominence within the context of Fogg's (2003) Prominence-Interpretation Theory.

Thirdly, with the advancement of technology teachers are leaning toward retrieving resources off the internet more and more. With the advancement of technology large organizations that used to provide teachers with paper driven resources are finding it more cost effective to present their curriculum to teachers via an on-line format. This knew technology has opened the door for smaller organizations who could not afford to present their curriculum to teachers previously.
This advancement in technology is also helping to open the door for curriculum for subjects like global citizenship. Before internet technology it would have been expensive for companies to produce resources on subjects from various countries, however the price for obtaining digital photographs, as well as, obtaining documents via the internet has been a significant contributor to the lower cost in producing such material. This cheaper technology has simplified the process for organizations to produce resources on global issues without having to make investments with the large overhead prices that their predecessors had to pay.

With the advancement in technology more and more classrooms are using computers and on-line resources. This use of technology will only grow as the educational systems advance in the future. This is why it is important for organizations that design curriculum for the on-line format to better understand what teachers are looking for in terms of resources and quality of the Web sites.

*Overview of the Chapters*

The study first provides a literature review in Chapter 2 on the formation of Fogg’s (2003) Prominence-Interpretation Theory, and on Fogg et al. (2003) and Stanford et al.’s (2002) benchmark studies that led to this present research. Next, in Chapter 3, the study explains the methods used, in terms of participant selection, the instrument used, research questions, and the procedure to obtain the data collected in this study. Chapter 4 presents the results of the survey questions. In Chapter 5, the results are discussed in terms of any significant findings. This is followed by a report of the limitations of this research and suggestions for future studies.
CHAPTER 2. LITERATURE REVIEW

Research on the improvement of Web sites is still in the early stages of becoming a discipline that is thoroughly researched and rigorously debated. Therefore B.J. Fogg’s 10 years of studies on Web site credibility has provided a very significant contribution to the research field of persuasive technology. As the concept of Web site credibility represents a large component of a Web user’s decision to use a Web site, it is essential to understand the development of this new field of research. This study focused on the seminal work of B.J. Fogg and the Stanford Persuasive Technology Lab. Through their research, Web site designers who develop curriculum on Global Citizenship will have a much better idea about the types of improvements they can make to create Web sites that persuade more teachers to access their content. This in turn will help more teachers promote Global Citizenship to their students.

The literature review explains B.J. Fogg and Hsiang Tseng’s (1999a, 1999b) early papers on computer technology and credibility. This lays the foundation for all of the successive research that has been done on Web site credibility. The literature review then addresses the difference between “trust” and “credibility” (Fogg & Tseng, 1999a, 1999b). Next the two main components of credibility, expertise and trustworthiness are addressed (Fogg & Tseng, 1999a, 1999b). Through Fogg and Tseng’s (1999a, 1999b) early papers the four types of credibility are explained in further detail, which is followed by an explanation of the two main evaluation variables: user experience and user needs.

The literature review then elaborates on the two benchmark studies (Fogg et al. 2003; Stanford et al. 2002) that this study is based on, this is followed by Fogg’s (2003)
explanation of Prominence-Interpretation Theory. Finally the literature review discusses how credibility affects design look, source of information, and domain source.

The backbone of Web site credibility research in relationship to computer products has come from the Stanford Persuasive Technology Lab (www.webcredibility.org) by Fogg and Tseng (1999a, 1999b). They simplified credibility and defined it as, "...believability." Or in other words, "...credible information is believable information." (1999a, p. 39 and 1999b, p. 80). The authors note that, "In fact some languages use the same word for these two English terms" (1999b, p. 80). These were the first significant forays into trying to define a new field of study. In 2001, Fogg et al. began to shift away from the general concept of all computer technology and focused more specifically on the relationship between Web sites and credibility. These researchers applied the same defining principles as the earlier Fogg and Tseng (1999a, 1999b) papers.

In 2003, Fogg et al. released their results from a 2002 experiment. Credibility was studied across ten different fields of on-line Web sites that dealt independently with their area of interest with examples such as, "...Amazon (e-commerce), E! Online (entertainment), E*Trade (finance), WebMD (health), CNN (news), American Red Cross (nonprofit), E-pinions (opinion/review), Yahoo! (Web search), ESPN (sports), and Expedia (travel)" (p. 3). Simultaneously, a joint study by Stanford, Tauber, Fogg, and Marable (2002) was conducted to see if there was a difference between experts’ and consumers’ perceptions of Web site credibility. This joint study focused on Health and E-commerce Web sites.
Since Fogg and Tseng’s (1999a, 1999b) initial papers that outlined future research on credibility, other researchers have looked at the relationship between credibility and Web sites designed for a specific area of interest, such as Health Web sites (Bates, Romina, Ahmed, & Hopson, 2006; Dutta-Bergman, 2004; Long & Chiagouris, 2006; O’Grady, 2004; Shon, Marshall & Musen, 2000), News Web sites (Flanigan & Metzger, 2000; Greer, 2003; Seki, Kando, & Aono, 2006), E-Commerce Web sites (Brown, Rahman & Hacker, 2006; Riegelsberger & Sasse, 2002; Riegelsberger, Sasse & McCarthy, 2003; Yang, Ahmed, Ghingold, et al., 2003), and Scientific Web sites (Triese, Walsh, Childers, Weigold & Friedman, 2007). These researchers have opened a new path into the field of Web site credibility. Their research is detailed further, in the following review.

In 2003, Fogg pointed out that Web site credibility research is an important inquiry of study. He contended that there was a growing amount of untrustworthy content found on the internet:

The success of most Web sites today depends on whether users perceive the site to be credible. If users think a site lacks credibility... they will abandon the site and seek to fill their needs in other ways.... professionals must design Web sites for credibility.... A key step in this process is to develop a principled understanding... of how people assess the credibility of online content (p. 722).

Petty and Cacioppo’s (1986) Elaboration Likelihood Model (ELM) noted that credibility of information is a key early stage in the persuasion process, “...credibility is an ‘extra message cue’ that is a critical aspect of the persuasiveness of a message” (as quoted by Wathan & Burkell, 2002, p. 134).
Trust vs. Credibility

As Web site credibility is a perceived quality (Fogg & Tseng, 1999a, 1999b; Fogg et al., 2001), some researchers in their confusion (Reigelsberger & Sasse, 2002; Riegelsberger et al., 2003), have made semantic errors when discussing components of trust and credibility. Fogg and Tseng (1999a, 1999b) pointed out, while closely related, trust and credibility are two different things. Fogg and Tseng, (1999a) offer a simplistic guideline to judge the semantic difference between trust and credibility; “trust” equals “dependability,” while “credibility” equals “believability” (p. 41).

For example, in the case of Amazon.com, a computer user might have “trust” in Amazon’s services because they have ordered books in the past from Amazon and have always received the books in a prompt and timely fashion. This would make Amazon a “dependable” organization, one the user could “trust.” However, “credibility” would deal with the information that Amazon expresses to its customers. If it claimed it could deliver books within one week of the purchase, the user would have to make a judgment as to whether or not this information was “believable,” or “credible.” Fogg and Tseng (1999a) also point out the fine line that the previous research has crossed by making the error of using “trust in information” and “trust in advice” when they should have used the term “credibility” as both of these phrases are referring to “believability” and not “dependability” (p. 41). Fogg and Tseng (1999b) note that, “those who read the research on trust and machines must note if the author is addressing ‘trust’ dependability—or if the author is addressing ‘trust in information’—credibility” (p. 81).
Trustworthiness & Expertise

Trustworthiness and expertise have long been considered the two most significant components of credibility of information (Stemthal, Phillips, & Dholakia, 1978). To help further understand the term credibility and its two main components, Fogg and Tseng (1999b) outlined key terms to help future research describe credibility, trustworthiness, and expertise. The key terms to describe credibility were:

“(a) credible, (b) believable, (c) reputable, (d) trust in information, (e) accept the advice, and (f) believe the output” (p. 86).

Key terms to describe trustworthiness were:

“(g) trustworthy, (h) good, (i) truthful, (j) well intentioned, (k) unbiased, and (l) honest” (p. 86).

The key terms to describe expertise were:

“(m) knowledgeable, (n) competent, (o) intelligent, (p) capable, (q) experienced, and (r) powerful” (p. 86).

Fogg et al. (2001) noted in regard to the two main components of credibility that, “The trustworthiness dimension of credibility captures the perceived goodness or morality of the source. Expertise, the other dimension of credibility.... captures the perceived knowledge and skill of the source” (p. 62). When applying these two terms to Web site credibility (Fogg & Tseng, 1999a, 1999b; Fogg et al, 2001), researchers at SPTL have made their position clear that credibility and its two main components, trustworthiness and expertise, are perceptions. That is computer users who visit Web sites, form a perception of what makes a Web site credible. A Web site is not inherently credible by itself. It needs a person to perceive its level of credibility.
Researchers at SPTL (Fogg et al., 2001) created a simplistic survey that asked computer users about credibility in relationship to a Web site article and the two main components of credibility; trustworthiness and expertise. For each subject, they asked about (a) credibility, “How believable is (the) article? How credible is (the) article?” (b) trustworthiness, “How trustworthy is (the) article? How unbiased is (the) article?” (c) expertise, “How expert is (the) article? How competent is (the) article?” In this manner they were able to calculate a “composite score” for credibility (pp. 295-296).

Four Types of Credibility

Fogg and Tseng (1999a) helped to clarify that when computer users are evaluating Web site credibility, they are doing so on four separate levels of perception. Sometimes the computer user perceives these four separate levels in a linear or non-linear fashion, sometimes alone, in combination, or all at once. Fogg and Tseng (1999a) have categorized these separate levels of perception, as four types of credibility. They are (a) presumed credibility, (b) reputed credibility, (c) surface credibility, and finally (d) experienced credibility (pp. 41-42)

Presumed credibility (Fogg & Tseng, 1999a) is based on a computer user’s already preconceived assumptions about the Web site. These assumptions could be either positive or negative, such as a computer user assuming a Web site by the IRS would be trustworthy with information about filing taxes. Whereas they might assume a pharmaceutical company’s Web site for health information might be less credible based on the perception that the company is trying to market their information to get people to buy their products.
Reputed credibility (Fogg & Tseng, 1999a) is a computer user’s perception of credibility based on a third party’s endorsement. This could include an article that is written by, (a) a leading scientist, (b) an award winning author, (c) a Pulitzer Prize winner, (d) the President of the United States, or (e) a Professor from Harvard University. This endorsement of reputed credibility can also be seen on Web sites that show seals of approval or distinguished awards. All of these third party endorsements help give a boast to a Web site’s reputed credibility.

Surface credibility (Fogg & Tseng, 1999a) can be attributed to the visual elements that a computer user perceives to be credible. In essence, “people are judging a book by its cover” (p. 42). Surface credibility pertains to all visual elements such as font styles and sizes, colors, photographs and stream-lined videos. Literally, it is everything the computer user deems credible based on sight perception. Wathan and Burkell (2002) elaborate on the aspects of Surface credibility. They stated that graphic, usability of interface, and how well the site is designed can all affect the site’s credibility (p. 140).

Experienced credibility (Fogg & Tseng, 1999a) is the fourth type of perceived credibility. This credibility is based on a person’s first-hand experience. If a computer user visits a particular news site on the internet for a number of years, he or she might perceive that source of information to be credible based on all the years he or she has experienced reading credible articles from that news site. On the other hand, he or she may have had many years experience driving a particular brand of car, and based on this experience, he or she might determine that the particular car manufacturer’s web site has a high level of credibility.
Two Types of Credibility Evaluation Variables

Fogg and Tseng (1999b) pointed out the importance of understanding Petty and Cacioppo's (1986) Elaboration Likelihood Model's "peripheral processing," and "central processing" when speaking about designing computers (Web sites) that want to achieve high levels of perceived credibility. They noted that if a user has a "low level of involvement" with a computer product they use "peripheral cues", such as the "attractiveness", but if users have a "high level of involvement," they will focus on "content" more than the "peripheral cues" (Fogg & Tseng, 1999b, p. 84).

This is important to understand how Fogg and Tseng's (1999a) four types of credibility are perceived utilizing what Fogg and Tseng note are user variables for credibility evaluations. Two of these; user experience, and user need, may play a significant role in a user's perceptions of a Web site's credibility. User experience is the first user variable that effects a credibility evaluation (Fogg & Tseng, 1999b). This is a person's expertise as it relates to the Web site she or he is viewing. For instance, a doctor might evaluate a Health Web site's content differently for credibility than a non-health professional. This difference in evaluation may be due to expertise or a lack of expertise.

The second user evaluation variable that relates to Web sites is user need for information (Fogg & Tseng, 1999b). For example a person diagnosed with breast cancer might find the American Cancer Society's Web site to be more credible or less credible than an average person based on his or her high interest in the information provided. This person might be more influenced by content, as opposed to more professionally designed graphics.
To simplify this perceptual construct, it might be easier to think of the four types of credibility markers (presumed credibility, reputed credibility, surface credibility, and experienced credibility) to be what a computer user perceives when analyzing credibility, and the user variables for credibility evaluations (user experience and user need for information) to be how a computer user is perceiving a Web site's level of credibility.

Benchmark Studies

In a study with over 2,500 participants assessing what they look for in terms of a Web site's surface credibility, the researchers at SPTL asked participants open-ended questions to evaluate two Web sites simultaneously (Fogg et al., 2003). Next they coded the answers into 18 different categories to explore what consumers were evaluating when they looked at Web site credibility. Fogg et al. (2003) found that consumers' comments were concerned with: (a) design look (46.1%); (b) information design/structure (28.5%); (c) information focus (25.1%); (d) company motive (15.5%); (e) usefulness of information (14.8%); (f) accuracy of information (14.3%); (g) name recognition & reputation (14.1%); (h) advertising (13.8%); (i) bias of information (11.6%); (j) tone of writing (9.0%); (k) identity of site sponsor (8.8%); functionality of site (8.6%); customer service (6.4%); past experience with site (4.6%); information clarity (3.7%); performance on a test (3.6%); readability (3.6%); and, affiliations (3.4%) (pp. 5-10). This study also noted that consumers of Web sites in specific categories (Health, E-commerce, etc) evaluated different aspects of credibility compared to the overall average the Web sites that were judged (Fogg et al., 2003).

In conjunction with this research, a joint study (Stanford et al., 2002) was conducted to compare expert and consumer evaluations of Web site credibility. This new
research employed methods from both of the SPTL (Fogg et al., 2001, Fogg et al., 2003) major studies of note. The significant difference in experts’ and consumers’ comments about Web site credibility (Stanford et al., 2002) was that experts were more concerned with content, while consumers looked more toward design look for their credibility assessments.

Prominence Interpretation Theory

After four years of research Fogg (2003) proposed a theory that would help future researchers study Web site credibility. He stated:

Prominence-Interpretation Theory posits that two things happen when people assess credibility online: 1) The user notices something (Prominence), and 2) The user makes a judgment about it (Interpretation). If one or the other does not happen, then there is no credibility assessment (p. 722).

In terms of prominence, Fogg (2003) pointed out that users have to notice something on the Web site for them to make a judgment on the Web site’s credibility. He listed five factors that influence a user’s perception of prominence. They are (a) Involvement of the user (i.e., the motivation and ability to scrutinize Web site content), (b) Topic of the Web site (e.g., news, entertainment), (c) Task of the user (e.g., seeking information, seeking amusement, making a transaction), (d) Experience of the user (e.g., novices vs. expert in regard to subject matter or Web conventions), and (e) Individual differences (e.g., a person’s need for cognition, learning style, or literacy level) (p. 722).

These factors then affect how the user interprets the information that they see on the Web site. Fogg (2003) listed three factors that affect a user’s interpretation of a Web site’s credibility. They were (a) Assumptions in a user’s mind (i.e., culture, past
experiences, heuristics, and so on), (b) **Skill/knowledge** of a user (e.g., user’s level of competency in the site’s subject matter), and (c) **Context** (e.g., the user’s environment, user expectations, situational norms, and so on) (p. 723).

*Design Look*

As Brown et al. (2006) notes about the research by Basso et al. (2001) the Web site design is crucial because, “without a favorable first impression, the rest of the Web site almost becomes irrelevant” (p. 257). Studies into the area of investigating credibility in terms of a Web site’s design look have found some notable and interesting findings. Fogg et al. (2000) found that the interface design and navigation were very important to users of the Web site in terms of credibility. They also found that listing a company’s physical address as well as contact phone number led to a “real-world presence” that provided a boost in their overall Web site credibility. While small typographical errors reduced the credibility of a Web site, they were not able to clarify whether or not ads posted on the Web site led to a positive or negative credibility correlation. However, this might have been caused from their survey (Fogg, 2003) asking questions about “interpretation” without relying on “prominence” to make sure their findings were supported.

This was not the case when the researchers looked at the user’s perceptions of credibility in relation to banner ads, photos of authors, and names of authors (Fogg et al., 2001). They found that a banner ad with a low reputation significantly changed a user’s perception of credibility. Greer (2003) found that high or low reputation banner ads had little to no effect upon a Web site’s credibility. Fogg et al. (2001) also looked at how an article with a casual photo, a formal photo, and no photo affected the user’s judgment.
They noted that a significant amount of participants rated an article with a formal photo much more credible than the same article with only an informal photo. In a slightly different study on e-commerce Riegelsberger and Sasse (2002) found the results of using photographs to be very ambiguous amongst different customer types. In a new study the following year, Riegelsberger & Sasse (2003) could not find any evidence that photos were a good way of building trust in the information of e-commerce sites. Fogg et al. (2001) could not show a significant difference between an article with a formal author’s name, an informal author’s name, or no author’s name. As far as displaying awards that a Web site has received, Shon et al. (2000) discovered that as far as a health Web sites were concerned, the displaying of awards made no significant difference in users’ perceptions of credibility. However, their results could have more to do with the lack of recognition of the fictitious awards they used in the study, as the researchers themselves rightfully admitted. In summing up Web site design, Brown et al. (2006) pointed out that simplicity of design, such as Google’s simple interface, “... is the art of good design” (p. 267).

Source of Information

The source of the information provided on a Web site has shown differing effects upon users’ judgment of credibility. Bates et al (2006) studied the effects that the sources of the information had on users’ perceptions of health information. In their research they found that the source of high or low reputation made no difference upon users’ perceptions of credibility. However, Greer’s study (2003) on news Web sites showed that source cues did have a significant effect upon perceptions of a Web site’s
credibility. When Flanigan and Metzger (2000) studied news information, they found that sources with persuasive intent were deemed less trustworthy.

The Triese et al. (2007) study on scientific Web sites supports Greer's (2003) earlier research. They found that using a source like NASA on a Web site gave a scientific article more credibility, as opposed to a Web site with a scientific article by a generic organization. This is supported with Rieh and Belkin's (1998) earlier study that found a significant number of respondents were influenced by an organization's already firmly established credible reputation, such as academic and governmental organizations. They found that commercial Web sites were less credible because their Web site content was more for marketing purposes, rather than informational purposes.

*Domain Source*

Rieh and Belkin (1998) found that .edu and .gov Web sites were regarded as having more credibility that commercial .com Web sites. The Treise et al. (2007) study also revealed that .gov Web sites were viewed as more credible sources of information compared to .com Web sites.

*Summary*

This combined previous research mentioned in the literature review stands as the backbone and inspiration for this exploratory study. Most important are the two studies performed by Fogg et al. (2003) and Stanford et al. (2002) that have shown there is a difference between average consuming Web users and professional consuming Web users' judgments about Web site credibility. Based on this finding and Fogg et al. (2003) and Stanford’s et al. (2002) research methods, a similar exploratory study could be
designed that focused on teachers as the experts in their field and how they judged Web sites that provide curriculum for them to use in their classrooms.
CHAPTER 3. METHOD

Overview

This Chapter covers the methods used in this exploratory study, based on the previous research of Fogg et al. (2003) and Stanford et al. (2002). I sent out an on-line survey asking participants to rate a group of Web sites based on their perceived level of credibility. I then categorized the participants’ comments into codes that could be interpreted for their quantitative qualities. I replicated their previous studies’ methods as much as possible; which gives my exploratory study an added aspect of internal validity based on their rigorous experimentation with different possible methods used to collect and analyze their data.

First, this chapter discusses the instrument used and the randomization process involved with utilizing an on-line survey. Next the selection of participants is discussed as well as the sampling procedures. This is followed by a discussion of the Web sites that were used in this study. The research questions are then presented, along with an explanation of how the evaluation of credibility is addressed. Finally, an explanation of the research questions’ key concepts and how the survey addresses these key concepts is presented.

Instrument

This study was conducted utilizing Survey Monkey (www.surveymonkey.com). It is an on-line survey Web site. The collection of the data took place for two weeks from September 30th, 2007 to October 13th, 2007. Seventy-seven participants, that were teachers working in kindergarten through 12th grade throughout the United States, began the survey and 48 participants completed the survey in its entirety for a 58.8%
completion rate. This collection instrument was chosen for its resemblance to the on-line questionnaire that both Fogg et al. (2003) and Stanford et al. (2002) used for their studies. With the on-line survey the researcher was able to send via e-mail an on-line invitation to various teachers working in kindergarten through 12th grade throughout the United States. With Survey Monkey the data was collected 24 hours a day for two weeks, negating the time differential between Hawaii and the continental United States. Also the collection of responses from teachers in kindergarten through 12th grade had the potential to collect data from all 50 United States.

Randomization of Survey

In order to keep the same basic design principals that both the Fogg et al. (2003) and Stanford et al. (2002) studies used to rank the Web sites, an on-line questionnaire with extra Web pages was built into the Survey Monkey on-line survey. This helped to keep the order of the Web sites viewed as random. With their on-line surveys Fogg et al. (2003) and Stanford et al. (2002) were able to present their survey participants with ten randomly ordered links to the Web sites. The participants then ranked the Web sites according to their level of credibility.

In part one of Fogg et al. (2003) and Stanford et al.’s (2002) rankings, two Web sites at a time were presented and ranked until they compared all ten Web sites. The pairing of these Web sites was a different random pairing for each participant. This helped to reinforce the construct validity (Baxter & Babbie, 2004) of the survey. In the second part of the ranking of the Web sites, Fogg et al. (2003) and Stanford et al. (2002) presented all ten Web sites’ links on one Web page for their participants to view and rank, one at a time. Both of these rankings were followed by an opened-ended question asking
the participants to share their thoughts. Due to the smaller size of this study, only six Web sites were chosen for the participants to view. Also to counter question fatigue only part one of Fogg et al. (2003) and Stanford’s et al (2002) methods for the ranking of two pairs of Web sites was applied. Web pages were created, so that participants could rank three Web sites at the same time. This allowed for only two Web pages that the participants had to view, opposed to the six Web pages that Fogg et al. (2003) and Stanford et al. (2002) employed in their online survey. Thus, it was hoped that the participants in this research would not suffer from fatigue as they had fewer text boxes to fill in.

I tried to duplicate these two benchmark studies with the random pairings of the three Web sites that were viewed by the participants. This was a modified version of the Fogg et al. (2003) and Stanford et al. (2002) survey. Survey Monkey did not posses the technical ability to present only two Web pages with a randomized comparison of the six different Web sites in groups of three, because of this, I built into the survey an additional 41 Web pages for a total of 43 Web pages that compared the six Web sites in a unique random grouping of three for each participant that took the study.

Survey Monkey did have *skip logic*. This enabled the participants to skip pages in the survey. With *skip logic* I was able to randomize the pairings of the Web sites viewed. First the survey asked the participants to choose either number one or number two. Depending on their selection, *skip logic* took the participants to two different Web pages. On these second Web pages the question was identical. It asked the participants to choose a number from zero to nine, based on the last digit of their birthday. For example if their birthday was the 13th of October, they would choose the number three.
There were six different Web sites that needed to be compared in random groups of three. This created 20 different and unique combinations. The two different Web pages contained a total of 20 different and unique answers. The survey was able to match the 20 different first possible combinations that comparing groups of three unique Web sites created. *Skip logic* took the participants to the corresponding page that their selection was connected to. When the participant completed the task for their first grouping of three Web sites *skip logic* took the participant to the second unique grouping of three Web sites. Thus, there were two-by-twenty different possible combinations that the participants had a chance to view. In this way, I tried to match the randomization of pairings found on the Fogg et al. (2003) and Stanford et al. (2002) online surveys.

*Participants*

All of the participants were teachers working in kindergarten through twelfth grade. All of the participants were given an informational Web page that expressed the intent of the research, both a contact number of the researcher and the committee of human studies at the University of Hawaii. The participant was informed that the study had no foreseeable risk to them and that their responses were to be anonymous with no record of their name. At the bottom of the survey’s Web page, the participant was able to give their consent to being a participant by clicking the “next” bottom, where upon they proceeded to the next Web page in the survey (see appendix B). All of the participants were teachers in the United States.

Fogg et al. (2003) gathered the participants via e-mail solicitation to various groups and organizations. This method, also used in this study, was done to reach a wider and more diverse group of teachers throughout the United States. The sampling of
participants was obtained via an on-line snowball sampling and an on-line quasi convenient/snowball sampling e-mail campaign to various teachers and teaching organizations around the United States, as well as speaking to various schools and teachers in Hawaii that I visited. In this manner, a quasi snowball sampling and convenient sampling was conducted. Each participant was asked to forward an invitation to fellow teachers whom they knew and who he or she thought would be willing to take part in the survey.

_E-mail Invitation Campaign_

_Snowball Sampling_

I obtained participants by e-mailing ten friends asking them to forward the link of the survey to any teachers that they knew. I then e-mailed four teacher contacts that I knew in the mainland. This was followed by four e-mails to Professors in Education at two different education departments that I am interested in attending for doctoral studies. Also, I e-mailed 14 teacher contacts that I knew in Hawaii. All of the e-mails were three to six sentences long, and they asked the potential participants to forward the link of the survey to any teacher they knew of teaching kindergarten through twelfth grade in the United States.

_Quasi Convenient/Snow-ball Sampling_

Outside of Hawaii, I e-mailed other graduate students enrolled in education departments from two of the most familiar universities to me, in each of the 50 United States. The graduate students were selected if they were a member of the graduate student senate or if they were a member of a graduate student organization within their education department. If a graduate student’s e-mail address could not be located then I e-mailed a
professor or another official of that University’s Education department. This equaled 100 e-mails sent out.

Using the National Education Association Web site (www.nea.org), I e-mailed the director of communication at each of the 50 state education associations of teachers. This equaled 50 e-mails sent out. I posted on three teacher forums asking for teachers to participate in the survey. The teacher forums were presented by (a) Teacher Focus (www.teacherfocus.com), the Teachers’ Corner (www.teacherscorner.net), and (c) A to Z Teacher Stuff (www.forums.atozteacherstuff.com).

Finally, I visited the Council of Chief State School Officers Web site (http://www.cesso.org) and located the National Teacher of the Year Awards Web page. I then located the State Teacher of the Year Web pages for the last five years. I sent an e-mail to every teacher in each of the fifty states that received a state teacher of the year award, received in the years from 2003 to 2007. This equaled 250 e-mails that were sent out. In all of these cases the invitation e-mail explained to the prospective teacher that they could forward the e-mail to any teacher they knew of in the United States teaching in either primary or secondary schools. A total of 51 of these e-mails sent to the above prospective participants were returned as undeliverable.

Web Sites

The following educational Web sites were used in this study based on the mission statement or about section found on their organizations’ Web site. The main criteria for selecting these Web sites were; large organizations that would be familiar to most teachers in the United States presented the Web sites and they presented curriculum that increases students’ knowledge of the world and its many cultures, thus increasing their
knowledge and awareness of Global Citizenship. The secondary criteria for choosing the Web sites were; they were all one link away from the organizations main home page and they all contained material for teachers in elementary school, middle school, and high school. The Web sites chosen based on their about sections or mission statements, were the following:

*The National Geographic Society’s My Wonderful World Web Site-*

www.mywonderfulworld.org

"Geography is more than places on a map. It's global connections and incredible creatures. It's people and cultures, economies and politics. And it's essential to understanding our interconnected world. But sadly, our kids aren't getting enough of it. A new National Geographic-Roper survey shows half of young Americans can't locate world powers like Japan and India. Twenty percent can't even find the Pacific Ocean. Without geography, our children aren't ready for the world. That's why we started My Wonderful World. It's a National Geographic-led campaign—backed by a coalition of major national partners—to expand geographic learning in school, at home, and in the community. We want to give our kids the power of global knowledge.” (Retrieved September 9, 2007)

*Oxfam U.K. 's Education Web Site-*

www.oxfam.org.uk/education/

"Oxfam works in education policy and practice to empower young people to be active Global Citizens. We promote education that helps young people understand the global issues that affect their lives and take action towards a more just and sustainable world.” (Retrieved September 9, 2007)
The Smithsonian Institute’s Educators Web Site-

www.smithsonianeducation.org/educators/index.html

“The Smithsonian Center for Education and Museum Studies provides leadership in education at the Smithsonian and produces a variety of programs, services, and resources for the education and museum communities. The Center studies education at the Institution and builds consensus on standards for strengthening its educational programs, publications, and websites.” (Retrieved September 9, 2007)

These resources are focused on topics of a) World History, b) World Culture, and c) World Art.

The United Nation’s Cyber School Bus Web Site-

www.un.org/cyberschoolbus/index.shtml

“The United Nations Cyberschoolbus was created in 1996 as the online education component of the Global Teaching and Learning Project, whose mission is to promote education about international issues and the United Nations. The Global Teaching and Learning Project produces high quality teaching materials and activities designed for educational use (at primary, intermediate and secondary school levels) and for training teachers. The vision of this Project is to provide exceptional educational resources (both online and in print) to students growing up in a world undergoing increased globalization. The Global Teaching and Learning Project is part of the Outreach Division of the United Nations Department of Public Information.” (Retrieved September 9, 2007)
The U.S. Peace Corps Coverdell World Wise Schools Web Site-

www.peacecorps.gov/wws/

“If you are a teacher, you have a treasure trove of resources available to you through the Coverdell World Wise Schools program of the Peace Corps. There's the Correspondence Match program that puts you and your class in touch with a currently serving Peace Corps Volunteer. There are innumerable lessons about cultures and countries worldwide. You'll find free cross-cultural publications, award-winning videos, stories, folk tales, classroom speakers, and more. The program is designed to broaden perspectives in culture and geography and to encourage service.” (Retrieved September 9, 2007)

The World Bank’s You Think for Teachers Web Site-

www.youthink.worldbank.org/4teachers/

“We give you information about the global issues you said matter to you. Check out the research, knowledge and experience gathered by World Bank experts on international development... Figure out what you can do to make your community and this world a better place. People say if a butterfly flutters its wings in one place, a storm gathers halfway around the world. The world functions like that. Everything is linked—education, employment, health, trade, conflict, etc. Sometimes these connections may be hard to see, but they exist, and their consequences affect all regardless where you live... You are the present. You are inheriting the future.” (Retrieved September 9, 2007)
Research Questions

Demographic Characteristics of Teacher:

RQ1: What are the relationships between the demographic characteristics of the teacher in terms of (a) grade level, (b) subject area taught, (c) gender, (d) teaching experience and their evaluation of credibility for educational Web sites that present curriculum on Global Citizenship for teachers?

This research question will address the effects that usefulness of information has upon the teachers’ motivation to view and rate the Web sites based on their credibility.

Teachers’ Need for Information:

RQ2: What are the relationships between teachers’ need for information in terms of (a) overall curriculum used from web sites, (b) desire to use curriculum, (c) time spent viewing Web sites and their evaluation of credibility for educational Web sites that present curriculum on Global Citizenship for teachers?

This research question will address the effects that teacher’s need for information has upon the teacher’s motivation to view and rate the Web sites based on their credibility.

Non-Prominence Interpretation

RQ3: What design factors do teachers believe will add credibility to Web sites that present curriculum on Global Citizenship for teachers?

This research question will address the effects that participants’ knowledge about design factors that are missing has upon their rating of the Web sites based on their credibility.

Resources

RQ4: What types of resources do teachers want from Web sites that present curriculum on Global Citizenship for teachers?
This research question explores the types of resources that teachers want Web site designers to include on their educational Web sites that present curricula on global citizenship.

Procedure

The research was conducted with an on-line survey that was based on previous questions used by Stanford et al. (2002) and Fogg et al. (2003) in their on-line survey for RQ1 and RQ2. For these two research questions, the survey tried to find out if demographics of teachers (RQ1) or teachers' need for information (RQ2) affected the rating of the Web sites' credibility. Participants were asked to view six different educational Web sites in sets of three at a time from the National Geographic Society, Oxfam U.K., the Smithsonian Institute, the United Nations, the Peace Corps, and the World Bank. Based on the methods of Stanford et al.'s (2002) study an on-line questionnaire asked the participants, “Please visit these educational Web sites by these organizations listed below, then come back to this page and rank them from most to least credible. In other words, look at the sites and decide which one has the most believable information” (p. 11). The participants were asked to rank two sets of three Web sites for a total of six Web sites evaluated.

Evaluation of Credibility

Following their ranking the participants were asked in open-ended questions to share their comments as they pertained to their ranking of the credibility of these Web sites. The open-ended questions were coded in agreement with the Fogg et al. (2003) results of their research on Web site credibility. Fogg et al. (2003) noted in their study that, “The most valuable data from this research are the comments that people made
about the Web sites they evaluated” (p. 3). The categories were (a) design look, (b) information design/structure, (c) information focus, (d) company motive, (e) usefulness of information, (f) accuracy of information, (g) name recognition & reputation, (h) advertising, (i) bias of information, (j) tone of writing, (k) identity of site sponsor, (l) functionality of site, (m) customer service, (n) past experience with site, (o) information clarity, (p) performance on a test, (q) readability, and (r) affiliations (pp. 5-10). The coded categories were then quantitatively analyzed to represent the teachers’ evaluation of credibility.

Demographic Characteristics of Teachers

Grade Level

The teachers’ grade level was determined through their response to survey prompt number one, “Please choose one box for the grade level that you teach. If you teach more than one grade level please choose the grade that you teach more predominately.” The response choices to this selection process were (a) kindergarten, (b) 1st grade, (c) 2nd grade, (d) 3rd grade, (e) 4th grade, (f) 5th grade, (g) 6th grade, (h) 7th grade, (i) 8th grade, (j) 9th grade, (k) 10th grade, (l) 11th grade, and (m) 12th grade.

Subject Area Taught

The teachers’ subject area taught was determined through their response to survey question number 2, “What subject do you teach? For Elementary school please select “General,” for Middle school and High school please select the subject area that you most predominately teach. Please select only one subject.” The response choices to this question were (a) general, (b) math, (c) science, (d) English and language arts, (e) social
studies, (f) art, (g) health, (h) physical education, (i) vocational class, (j) special ed., and (k) other.

Gender

To determine the teachers’ gender they were asked if they were a male or a female.

Teaching Experience

The teaching experience of the teachers was determined by survey question number 5, “How long have you been teaching?” The response choices to this question were, (a) 1-5 years, (b) 6-10 years, (c) 11-15 years, (d) 16-20 years, (e) 21-25 years, and (f) over 25 years.

Need for Information

Overall Curriculum Used from Web Sites

The survey asked the teachers to evaluate how much of their overall curriculum, that they use in their classroom, comes from educational web sites. Their response choices to this question were, (a) none, (b) less than 5%, (c) less than 10%, (d) less than 20%, (e) less than 30%, (f) less than 40%, (g) less than 50%, and (h) more than half. These responses determined the teachers’ estimated overall curriculum used from Web sites averaged over one school year.

Desire to Use Curriculum

The teachers desire to use the on-line curriculum, that was provided by the organizations in this survey, for future classes was determined with survey question number 12, “Do you agree or disagree that you will use one of these Web sites provided in this survey to help you conduct curriculum in your classroom?” The response choices
conformed to a seven point Likert-type scale. They were (a) very strongly disagree, (b) strongly disagree, (c) disagree, (d) unsure, (e) agree, (f) strongly agree, and (g) very strongly agree. These responses were used to determine the teachers’ desire to use the curriculum.

*Time Spent Viewing Web Sites*

The average amount of time that teachers viewed each website was based on their estimate to question number 13, “Approximately, how many minutes (per Web site) did you spend viewing each Web site?” Their estimated responses started at 1 minute and continued until 30 minutes in increments of 1 minute. There was also an ‘over 30 minutes’ response for teachers who estimated they viewed each Web site for over 30 minutes. Based on percentages the results were grouped by how close each grouping came to equal 33% of the total teacher’s surveyed. In this manner teachers who chose from one to 2 minutes for their response were placed in the first grouping, because they comprised 31.2% of the total teachers surveyed. Teachers who chose from 3 to 5 minutes were evaluated as the second grouping. They comprised 35.5% of the total teachers that were surveyed. Teachers who chose over 6 minutes were placed in the third group. They comprised 33.3% of the total teachers surveyed.

*Non-Prominence Interpretation*

RQ3 was an exploratory question. The survey based its question on the Stanford et al.’s (2002) second question in ‘Part 4 of 4’ of their online survey (p. 13). The survey asked an open-ended question for the teachers to answer, “If you had the opportunity to make suggestions to a Web site designer that would make a Web site in the educational
field for Global Citizenship more credible, what would it be?” The answers to this question were interpreted for their qualitative insight.

**Resources**

RQ4 explored the types of resources that teachers wanted educational Web sites that presented curriculum on Global Citizenship to provide for them to use. This question followed the format of the Stanford et al.’s (2002) open-ended exploratory question in ‘Part 4 of 4’ of their survey (p. 13). The teachers were asked, “If you had the opportunity to make suggestions to an organization designing a Web site for teachers that teach about Global Citizenship, what types of resources would you like them to provide you as a teacher?” As with RQ3, the answers to the question were interpreted for their qualitative insight.
CHAPTER 4. RESULTS

In this Chapter the results of the on-line survey are presented and analyzed. First the overall rankings of Web sites (Table 1) are presented by their cumulative mean score. This is followed by a brief analysis of each Web site's mean ranking score. After the brief analysis of the Web sites, teachers' grade levels are correlated to their ranking of the Web sites. Next the research questions are discussed in regards to their level of significance.

The link to the study was accessed by 77 participants. After reviewing the responses it was revealed that of these 77 participants, only 48 (N=48) participants completed the on-line survey in its entirety. First the participants ranked the two sets of three Web sites in order from most credible to least credible (Table 1). Then the participants' comments about their ranking of the Web sites' credibility were coded into 18 unique categories based the Fogg, et al. (2003) study, for a total of 129 total comments (N=129). The coded categories were design look, information design/structure, information focus, company motive, usefulness of information, accuracy of information, name recognition and reputation, advertising, bias of information, tone of writing, identity of site sponsor, functionality of site, customer service, past experience with site, information clarity, performance on a test, readability, and affiliations (Fogg et al., 2003, pp. 5-10). Since there were two separate sections of rankings, the participants were able to provide at least two unique comments in relationship to their rankings. In some cases a participant provided multiple comments that were coded. Thus one participant's comments may have been coded for more than two different categories.
Overall Rankings of Web sites

In Table 1, each Web site's level of credibility was ranked by the participants as being number one (most credible), number two, or number three (least credible). These rankings were then averaged together for a mean ranking. Overall the Smithsonian Institute's Educators Web site received the lowest mean score of 1.53 (most credible), while the World Bank's You Think for Teachers received the highest mean score of 2.53 (least credible).

Table 1.

Mean Ranking of Web sites by Teachers.

<table>
<thead>
<tr>
<th>Final Ranking</th>
<th>Web Site Name</th>
<th>Average Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The Smithsonian Institute's Educators</td>
<td>1.53</td>
</tr>
<tr>
<td>2.</td>
<td>The National Geographic Society's My Wonderful World</td>
<td>1.65</td>
</tr>
<tr>
<td>3.</td>
<td>The United Nation's Cyber School Bus</td>
<td>2.01</td>
</tr>
<tr>
<td>4.</td>
<td>Oxfam U.K. Education</td>
<td>2.03</td>
</tr>
<tr>
<td>5.</td>
<td>The U.S. Peace Corps's World Wise Schools</td>
<td>2.24</td>
</tr>
<tr>
<td>6.</td>
<td>The World Bank's You Think for Teachers</td>
<td>2.53</td>
</tr>
</tbody>
</table>
The Smithsonian Institute’s Educators—Ranked First

Figure 1. Smithsonian Institute’s Educators Web site.

The Smithsonian Institute received many positive comments that had to do with its long reputation of providing quality unbiased information. The Smithsonian Institute also received positive comments about its larger and more useful resources provided on its Web site as criteria for choosing it as the most credible. Overall 60.4% of participants (N=48) ranked this Web site number 1, when they compared it to the other Web sites in the groupings of Web sites they were asked to evaluate (Fig. 2).
Below are a few of the comments that were shared about the credibility of the Smithsonian Institute’s Educators Web site:

- “Smithsonian addressed standards by state; they had taken the time to try to correlate their material with our NCLB mandated standards/objective.” —Male, 8th Grade, Math

- “Smithsonian has the most comprehensive website that load(s) quickly. The Smithsonian institute is one of the most reputable organization(s) in the U.S. Thus, I rated it most credible.” —Male, 5th Grade, Other

- “Smithsonian seemed to be less politically biased than the other two websites.” —Female, 8th Grade, English/Language Arts
The National Geographic Society’s My Wonderful World—Ranked Second

Figure 3. The National Geographic Society’s My Wonderful World Web site.
The National Geographic Society received the second best mean score of 1.65 (Table 1). Again the name recognition helped to promote the Web site’s credibility. It appeared that information design and design look also helped to provide teachers with a credible Web site. Teachers generally ranked the National Geographic Web site either number one or number two in their respective groupings (Figure 4).

Figure 4. The National Geographic Society’s My Wonderful World Web site overall ranking distribution (N=48).

Below are a few comments:

- “Mostly gut instinct. Plus it seems that National Geographic is least likely to have a political agenda.”—Female, 9th Grade, Math
- “I believe National Geographic Society is a reputable organization. It’s difficult to determine which website is the most credible. Thus, I pick(ed) the website with the least political influence as the most credible.”—Male, 5th Grade, Other
- “NGS is a trusted name.”—Female, 7th Grade, Science
The United Nation's Cyber School Bus—Ranked Third

The United Nation's Cyber School Bus received the third lowest mean score of 2.01 (Table 1). This mean score came as a combination of being ranked number one and number three. Very few of the participants ranked the Cyber School Bus second (Figure 6). This could mean that this Web site had more polarizing components to it.
Figure 6. The United Nation's Cyber School Bus Web site overall ranking distribution (N=48).

A few of the comments:

- “Cyber School Bus is most interactive and provides great resources for students and teachers.”—Female, 9th Grade, Social Studies

- “UN Nation(s) World was surprised by the UN’s pages – well-designed, provocative quotes, a variety of multimedia.”—Male, 8th Grade, Other

- “The overall appearance of the UN site takes away from its credibility.”—Male, 11th Grade, English/Language Arts
Figure 7. Oxfam United Kingdom Education Web site.

Oxfam’s United Kingdom Education Web site ranked fourth with a mean score of 2.03 (Table 1). This is almost identical to the mean score of the United Nation’s Cyber
School Bus. However the frequency of participants ranking Oxfam from one, two, and three is more evenly distributed (Figure 8). This could mean that since it is possible that Oxfam has less of a reputation in the United States, it was judged more for its Web site design and content, as opposed to its name.

![Oxfam U.S. Education](image)

Figure 8. Oxfam United Kingdom Education Web site overall ranking distribution (N=48).

Below are a few comments:

- “Site design; content organization, content itself.”—Female, 12th Grade, English/Language Arts
- “The Oxfam site is designed best for the type of kids/teachers I work with, and the lesson plans are way more fun.”—Male, 8th Grade, Other
- “The Oxfam U.K. Education I’ve never heard of, so I can’t really determine how reliable the information is.”—Female, 12th Grade, English/Language Arts
The U.S. Peace Corps. World Wise Schools—Ranked Fifth

The U.S. Peace Corps Web site was ranked fifth with a mean ranking of 2.24 (Table 1). This was due to a large percentage of participants, who ranked this Web site with a second place ranking (Figure 10). This was not the situation with the Cyber School Bus or the Oxfam Web sites. They tended to be more evenly distributed in the participants ranking of their Web sites from first, second, and third. The Peace Corps Web site had a large percentage of participants, who continually ranked it as a second tier Web Site in terms of its credibility.
Figure 10. The U.S. Peace Corps. World Wise Schools Web site overall ranking distribution (N=48).

Some of the participants’ comments:

- “Ox, peace, smith(.) I’m a returned Peace Corps Volunteer, so my bias might be showing here. However, connecting students to real people - Americans, usually young and idealistic – is not a bad idea.”—Male, 8th Grade, Other

- “World Bank and Peace Corps obviously have some bias – which leads into a good discussion of good bias and bad bias.”—Female, 11th Grade, English/Language Arts

- “The U.S. Peace Corps didn’t have things for my Kindergartners, but was still interesting.”—Female, Kindergarten, Other
Figure 11. The World Bank’s You Think for Teachers Web site.
The World Bank's Web site was clearly ranked lower when compared to the other Web sites with a mean ranking of 2.53 (Table 1). Many comments dealt with the motive and bias of the World Bank's reputation. This Web site also received the largest proportion of third place rankings (Figure 12), combined with negative feedback.

Figure 12. The World Bank's You Think for Teachers Web site overall ranking distribution (N=48).

A few of the comments were:

- "World Bank seems to have an agenda, the other two seem rather neutral."—Male, 7th Grade, Science

- "The World Bank had not always been treated favorably by the news. Although, I don't always agree with the news media, enough questions have been raised to make me somewhat leery of this site."—Female, 4th Grade, Math

- "The World Bank's site is not the best of the lot. My Peace Corps experience vis-à-vis the World Bank may be an influence here on my
rating, but in truth. I didn’t realize it ‘was’ the World Bank until I came back here and saw the link.”—Male, 8th Grade, Other

Comments That Did Not Support the Ranking of Web Sites

Additionally there were eight comments (N=8) out of 129 total comments (N=129) that related to either praising the Web sites as being all equally credible, or complaining that either the Web sites all lacked credibility or that this method of determining credibility lacked validity. A few of those comments were:

- “They were all credible. The forced choice doesn’t work for me.”—Female, 12th Grade, Social Studies

- “Those of us taking this survey are being asked to take a cursory glance at a web site, and then rank it, so the responses lack depth, in my opinion.”—Male, 7th Grade, Science

- “I wouldn’t use any of these.”—Male, 11th Grade, Math
Ranking of Web sites by Grade Level

Table 2.

Ranking of Web sites by Teachers' Grade Level.

<table>
<thead>
<tr>
<th>Final Ranking</th>
<th>Web Site Name</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>K-5</td>
</tr>
<tr>
<td>1.</td>
<td>The Smithsonian Institute's Educators</td>
<td>1.38</td>
</tr>
<tr>
<td>2.</td>
<td>The National Geographic Society's My Wonderful World</td>
<td>1.69</td>
</tr>
<tr>
<td>3.</td>
<td>The United Nation's Cyber School Bus</td>
<td>1.92</td>
</tr>
<tr>
<td>4.</td>
<td>Oxfam U.S. Education</td>
<td>1.92</td>
</tr>
<tr>
<td>5.</td>
<td>The U.S. Peace Corps' World Wise Schools</td>
<td>2.54</td>
</tr>
<tr>
<td>6.</td>
<td>The World Bank's You Think for Teachers</td>
<td>2.46</td>
</tr>
</tbody>
</table>

Next the study examined if there was a difference in mean rankings of Web sites by grade levels (Table 2). Out of 48 participants (N=48) the Smithsonian still averaged the best ranking for credibility across the three different grade levels, while the World Bank Web site still had a mean score that ranked in the fifth category from teachers in elementary school, and ranked last for teachers in middle school and high school.

Elementary school teachers assessed the worst mean score to the U.S. Peace Corps’s Web site, while high school teachers mean ranking of the U.S. Peace Corps’s Web site jumped ahead to third place in their mean rankings of the Web sites with a score of 2.00. This could mean that the U.S. Peace Corps's Web site was handicapped with the elementary school teachers, since they only presented resources for teachers in grades
three and above. The survey question did not ask whether or not the information was useful to the teacher, but rather how credible was each Web site compared to the other Web sites. It was the teachers in this instance that gave more credence to the idea that if a Web site’s content was more useful to them then it was more credible as well. This result could mean that usefulness of information played a very large role in the rankings of these Web sites.
Comment Analysis

Table 3.

Comments on the Ranking of the Credibility of Web sites.

<table>
<thead>
<tr>
<th>Comment Category</th>
<th>n</th>
<th>P</th>
<th>Cumulative P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Name Recognition &amp; Reputation</td>
<td>30</td>
<td>23.3</td>
<td>23.3</td>
</tr>
<tr>
<td>2. Usefulness of Information</td>
<td>26</td>
<td>20.2</td>
<td>43.4</td>
</tr>
<tr>
<td>3. Information Design/Structure</td>
<td>16</td>
<td>12.4</td>
<td>55.8</td>
</tr>
<tr>
<td>4. Company Motive</td>
<td>13</td>
<td>10.1</td>
<td>65.9</td>
</tr>
<tr>
<td>5. Design Look</td>
<td>9</td>
<td>7.0</td>
<td>72.9</td>
</tr>
<tr>
<td>6. Information Focus</td>
<td>9</td>
<td>7.0</td>
<td>79.8</td>
</tr>
<tr>
<td>7. Could not Rank</td>
<td>8</td>
<td>6.2</td>
<td>86.0</td>
</tr>
<tr>
<td>8. Past Experience with Site</td>
<td>5</td>
<td>3.9</td>
<td>89.9</td>
</tr>
<tr>
<td>9. Bias of Information</td>
<td>4</td>
<td>3.1</td>
<td>93.0</td>
</tr>
<tr>
<td>10. Affiliations</td>
<td>3</td>
<td>2.3</td>
<td>95.3</td>
</tr>
<tr>
<td>11. Accuracy of Information</td>
<td>2</td>
<td>1.6</td>
<td>96.9</td>
</tr>
<tr>
<td>12. Functionality of Site</td>
<td>2</td>
<td>1.6</td>
<td>98.4</td>
</tr>
<tr>
<td>13. Tone of Writing</td>
<td>1</td>
<td>0.8</td>
<td>99.2</td>
</tr>
<tr>
<td>14. Customer Service</td>
<td>1</td>
<td>0.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

N=129
Comments

Table 3 shows that comments were coded into 18 unique categories. The study then ranked these categories by percentage of times they were mentioned compared to the overall number of uniquely coded comments (N=129).

Name Recognition and Reputation

At 23.3% of total comments made (Table 3), name recognition and reputation received the largest percentage of comments from teachers when they assessed the credibility of the six Web sites. Below are a few of the comments that related to name recognition and reputation:

- “The UN site included organizations I am already familiar with and people I know of and respect.”—Female, 4th Grade, Math
- “Smithsonian has always been credible and respected. It carries that reputation to its website.”—Male, 12th Grade, Other
- “I ranked this on familiarity with the company as a way to determine expertise/credibility. I went to the World Bank’s (Web site) — since it is linked to a bank I don’t think I would use it.”—Female, 4th Grade, General

Usefulness of Information

The usefulness of information at 20.2% of total comments closely followed the percentage of comments for name recognition and reputation (Table 3). These two categories of comments were separated from the rest of the categories in terms of overall comments made about the Web sites’ credibility. Usefulness of information comments included:
• "Oxfam, at a glance, seems to have useful strategies that would more easily translate into learning activities. Whereas, the other two sites are more of a resource in the sense that you could go there to get information, but not necessarily get an activity or lesson idea."—Male, 9th Grade, English

• "I ranked these sites based on what I teach as a special educator, along with the grade level."—Female, 4th Grade, Special Ed.

• "Websites were ranked from most immediately usable to least."—Male, 8th Grade, Math

*Information/Design Structure*

*Information design* and *structure* received the third most percentage comments with 12.4% (Table 3). Along with company motive these two comment categories comprised the second tier of the overall percentage of comments that teachers made about Web site credibility. Below are a few of the comments made about *information* and *design structure*:

• "I found that Cyber School Bus (was) an easier website to work with and seek information."—Female, 8th Grade, Physical Education

• "Layout and design."—Female, 12th Grade, English/Language Arts

• "The National Geographic was easiest to explore, Smithsonian next, and the United Nations sight most difficult."—Female, 2nd Grade, Math

*Company Motive*

*Company Motive* comments closely followed information design and structure comments with 10.1% of total comments (Table 3). These comments might have also been capable of being applied to the *name recognition* and *reputation*, but the researcher
tried to differentiate between the two in order to keep with the categories that the Fogg et al. (2003) study set as guidelines. Comments on company motive were representative of the following comments:

- “Oxfam is least credible for two reasons: First they are a corporation and thus by definition exist to follow an agenda for a few individuals based on input from only a small management group. Second, Oxfam’s site dedicates a lot of space to their claims of having a good reputation but give no disclosure of the individuals/other corporations who actually make up Oxfam. You are known by the company you keep and usually those who are secretive and circular in their disclosures are biased.”—Female, 10th Grade, English/Language Arts

- “The Smithsonian is least likely to have a political agenda, the UN most likely.”—Female, 9th Grade, Math

- “...didn’t seem to be selling something, didn’t seem politically influenced message.”—Female, 2nd Grade, General

Design Look and Information Focus

Comments about design look tied comments for information focus with 7.0% of the overall teachers’ comments about Web site credibility (Table 3). Comments about design look included:

- “My basis for the selection was based on how attractive they appeared to be. I used to be a professional photographer and like good audio-visual materials.”—Male, 12th Grade, Physical Education

- “The overall appearance of the UN site takes away from its credibility.”—Male, 11th Grade, English/Language Arts
Some comments about information focus were:

- “Not enough information on the initial page appears limiting in scope.”—Male, 11th Grade, Social Studies
- “Here I was swayed by both variety and focus.”—Male, 8th Grade, English/Language Arts

Remaining Comments

The following categories of comments comprised the overall total of comments based on percentage of times they were mentioned: (a) could not rank—6.2%, (b) past experience—3.9%, (c) bias of information—3.1%, and (d) affiliations—2.3%. The last four categories; accuracy of information, functionality of site, tone of writing, and customer service all received less than 1.6% of the total percent of comments concerning Web site credibility (Table 3).

Research Questions

Research Question One

“RQ1: What are the relationships between the demographic characteristics of the teacher in terms of (a) grade level, (b) subject area taught, (c) gender, (d) teaching experience and their evaluation of credibility for educational Web sites that present curriculum on Global Citizenship for teachers?”

Grade Level

There was no significant difference in percentage ranking of comments by different grade levels.
**Subject Area Taught**

There was no significant difference in percentage ranking of comments by different areas taught. The percentages generally matched the overall comments in terms of percentage.

**Gender**

*Figure 13. Frequency of comments by gender of teachers.*

The comparison of men and women in this study (Fig. 13) found that men tended to be slightly more interested in usefulness of information with 25.45% of their comments compared to the women’s comments (16.22%). Women do tend to have a larger percentage of comments about information design and structure; however, if the category of design look is combined with the information design and structure, the percent differential is not that great.
There was a strong correlation between teachers who have been teaching for over 25 years and their percentage of comments (36.36%) that dealt with name recognition and reputation of the organization presenting the Web site. For all of the variables looked at in this study, this combination had the largest percentage of comments.

**Research Question Two**

“RQ2: What are the relationships between teachers’ need for information in terms of (a) overall curriculum used from web sites, (b) desire to use curriculum, (c) time spent viewing Web sites and their evaluation of credibility for educational Web sites that present curriculum on Global Citizenship for teachers?”
**Overall Curriculum Used from Web Sites**

A surprising phenomenon was shown in the comments of teachers whose curriculum was self-reported at over 31% of their entire classroom curriculum. They expressed in over 22.22% of their comments about the usefulness of information, while they did not direct any of their comments toward design look and used only a few comments for information design and structure. This may have been due to their comments (11.11%) that said they had a past experience with these web sites. Also teachers who used less than ten percent of their overall curriculum from Web sites had 25.45% of their comments directed at usefulness of information.

**Desire to Use Curriculum**

The study did not find any evidence that teacher's assessments (that they would use or not use the Web sites in this study) correlated with the subject of their comments.
There was a strong correlation between teachers who viewed the Web sites for over 6 minutes and their comments pertaining to usefulness of information and information design/structure. There was an even a larger differential between teachers who viewed the Web sites for 6 minutes and teachers who viewed the Web sites for 1 to 2 minutes in terms of design look. Teachers who viewed the Web sites for 1 to 2 minutes had 18.52% of their overall comments directed at design look, while teachers who viewed each of the Web sites for over 6 minutes directed only 2.38% of their total comments toward the design look.
Research Question Three

“RQ3: What design factors do teachers believe will add credibility to Web sites that present curriculum on Global Citizenship for teachers?” Teachers were asked an open-ended question, “If you had the opportunity to make suggestions to a Web site designer that would make a Web site in the educational field for Global Citizenship more credible, what would it be?” This survey question tried to elicit teachers’ opinions about design factors that they did not see on the Web sites that might have added credibility.

Teachers’ responses to this question varied in their focus. Some teachers wrote of actual resources they wanted to see on the Web sites. Other teachers’ comments reflected factors that would increase credibility, but at the same time it would be very difficult to say that by not seeing these factors on the Web sites that these same teachers noted the Web sites in this survey were less credible. The analysis will therefore be broken down into three segments (a) resources wanted, (b) design factors that might add credibility, and (c) design factors not seen (non-prominence) that took away from the credibility assessments made by the teachers viewing the six educational Web sites in the survey.

Resources Wanted

Some teachers literally interpreted this question as asking what types of resources they wanted on the Web sites. Of the three responses this had the least to do with adding credibility to the Web site. These comments referred to making the Web site more interactive, and included suggestions for video games and videos. The teachers also asked for more pictures of the people who are from different countries around the world. This was followed by a teacher who asked for more international sites to be included on the
Web sites for a more global perspective. One response of note asked for links to real people so that they could contact people in other countries directly.

**Design Factors**

These responses appeared to be the teachers’ suggestions about design factors that might add to an educational Web site’s credibility. It did not seem that teachers were looking for these specific factors when viewing the Web sites in the survey, but rather they were after the fact reflective comments that teachers gave opinions on. One teacher simply wrote in terms of Web site design, “less is more, follow the standards” as to their response of adding more credibility to the web site.

Overall in terms of Web site design, teachers responses seemed to focus on making the sites easy to use and navigate. This would be in the form of making the site easier to browse and search, as well as providing “materials that were more immediately usable rather than a collection of links that were informational in nature.” Another teacher suggested to “invite comments and reviews” from other teachers visiting the Web site as a way to increase credibility. The factors that received the most comments were for Web sites to use other sites that are already deemed as credible, in the form of links for resources and links to sources of information from credible organizations.

**Non-Prominence**

The survey question was designed to elicit responses indirectly about factors that teachers did not see, but were looking for on the Web sites in the survey to assess credibility. There is the possibility that by not seeing these factors on the Web sites the teachers assessed the said Web sites as being less credible. One teacher who may fit into this category wrote, “Provide objective support for the position taken by the site. Leave
the politics and opinions out of it." In his response to the rating of the Web sites he backed up this position by stating, "You seem to be assuming that these sites have some degree of credibility. 'Credibility' is peer reviewed research, scientific support, etc.—some degree of objectivity. Lacking that, the sites don’t have credibility...." It could be surmised that by not seeing 'peer reviewed research' or 'scientific support' on the Web sites in the survey that this affected the aforementioned teacher’s credibility assessment.

A few other teachers made comments that were asking that the Web sites be more "age specific" or were "organized by grade level." It is possible that since only the Smithsonian Institute and the U.S. Peace Corps made this attempt to organize their websites in this manner, that these teachers might have ranked the other four Web sites as less credible for not being arranged by age or grade level.

One teacher commented that the information should be modified for special education teachers. This might give evidence that by not seeing this subject addressed on the Web sites this teacher may have rated the Web sites as being less credible. This phenomenon is more easily seen in light of the math teachers that participated in the survey. Of the nine math teachers who began the survey, only four teachers completed the ranking section of the survey. Of these four one teacher alluded to the special education teacher’s comment. He wrote for his first set of rankings, "Smithsonian has by far the most materials for math education." This might mean that since he did not see materials for math on the other two Web sites, he ranked them as less credible. This was followed by his comment for the second group of Web sites, "I wouldn’t use any of these." This might possibly be for the lack of math resources located on the Web sites. This was reinforced with this teacher’s response to wanting to use the Web sites for his
classes in the future. He marked that he very strongly disagreed that he would use any of these Web sites presented in this study. One teacher responded that the material presented on the Web sites be related to curriculum standards to increase credibility. Since only the Smithsonian attempted to do this, there is the possibility that this teacher assessed the other Web sites as being less credible.

Overall there was a link to factors that were not shown on the Web sites and their affect on some of the teachers' credibility assessments. However, these comments were in the minority of the overall comments made in relationship to the question presented in the survey.

Research Question Four

"RQ4: What types of resources do teachers want from Web sites that present curriculum on Global Citizenship for teachers?" Teachers were asked an open-ended question, "If you had the opportunity to make suggestions to an organization designing a Web site for teachers that teach about Global Citizenship, what types of resources would you like them to provide you as a teacher?" This question was interpreted for its qualitative data. Teachers responded to this question with many great suggestions. The most interesting suggestion was that a number of teachers commented they wanted to have a way of contacting other people from different cultures around the world. In essence they want to learn through interaction. One teacher summed this idea up best, "It's not just enough to tell someone about Afghanistan. Connect with someone 'from' Afghanistan and you bridge the cultural divide." Another wrote, "Access to live discussions with students in other countries." These comments were coupled with various suggestions for providing resources with, "More international points of view."
Quite a few teachers suggested links to other Web sites that could provide similar information in the form of maps, data, and information about other countries and cultures. One teacher asked for, “links to organizations that work to promote Global Citizenship.” Teachers mentioned worksheets, and class activities, as well as lesson plans, but usually included in these comments was the notion that teachers do not have a lot of free time to go dig for this information. There was a general sense in the comments that teachers want to pull curriculum off the Web sites as fast and easily as possible. One teacher summed this up best, “Provide me with as much content that I can use as quickly as possible.”

Other noteworthy comments included a suggestion for resources on activities such as “writing contests” and “travel experiences.” Another teacher suggested a calendar on the Web site with important dates for Global Citizenship. Finally, one teacher offered advice that was extremely insightful. He said that he was trained by the Smithsonian Institute to better navigate and use their Web sites. This teacher made sure to mention the idea of providing “training sessions to teachers so that they know how to maximize the resources offered by the (Web) site.”
CHAPTER 5. DISCUSSION

Conclusion

In summation of the analysis, the results of this study’s percentage of teachers’ comments closely mirror the results of the Stanford et al. (2002) study, that found experts were more concerned with name recognition/reputation as well as the content of the information more than they were concerned with design look and design elements. Furthermore, in support of Fogg et al.’s (2003) research, the open-ended comments made by the participants in the survey provided a great source of insight into the credibility rankings.

Interestingly, name recognition and reputation received the largest percentage of comments, while the Smithsonian Institute and the National Geographic Society repeatedly were mentioned as being less biased and more objective than the other Web sites. It appeared that their name recognition superseded any design elements that the other Web sites were able to implement. This finding might show the necessity for organizations that designed Web sites for Global Citizenship to be mindful of linking their Web sites to reputable organizations that are deemed as unbiased and not politically motivated.

This conclusion is reinforced with many teachers’ comments about the Web sites of the United Nations, Oxfam U.K., the U.S Peace Corps, and the World Bank as being politically motivated. This hurt their credibility rankings. While the reputation for being unbiased affected credibility in a positive way for the Web sites of the Smithsonian Institute and the National Geographic Society. It may be understandable that a well-respected national museum has a clear advantage over other organizations when it comes
to teachers’ assessments of being politically unmotivated, with the National Geographic Society as a close second for having an unbiased reputation. But what is interesting to note is that of the six Web sites, only the National Geographic presented links to other organizations’ educational Web sites on their Web site’s front page. With over eight links in total represented on the front page of the National Geographic Society’s *My Wonderful World* teachers’ Web site, this may have shown the survey respondents that the dissemination of information about geography was the most important issue to this organization. This is in contrast to the self promotion of the educational Web sites of the United Nations, Oxfam U.K., the U.S. Peace Corps, and the World Bank.

In terms of answering RQ1 and RQ2, I felt the survey did not provide enough quantitative data that could justify an assessment that the final positions of the teachers’ rankings of the Web sites and the rankings of their comments were significant. However, this quantitative data coupled with the qualitative remarks of the teachers did provide a good framework to explore the different variables that might cause a teacher to assess a Web site’s credibility. Namely, that time spent viewing Web sites could be a stronger indicator than a person’s expertise in a given field when comparing the comments of what the participants were looking at when they assessed a Web site’s credibility. This could mean that in the Stanford et al. (2002) study it is possible that the experts’ comments were more focused on content not because they had more expertise than the average consumers in the Fogg et al. (2003) study, but rather that they happen to have spent more time looking at the Web sites and thus the comments on content reflected this.

This could possibly mean that design look is just as important to experts as it is consumers. But that once people get passed the initial look of the Web site and the longer
they stay on the Web site the more their credibility assessments are centered on issues of content and usefulness of information. This could lead to the idea that Web site credibility is not assessed in terms of content is more critical than design look, or that information design/structure is more important than usefulness of information, but rather that Web site users assess credibility in stages. It may be possible that first they look at name recognition, then design look, next information design structure, followed by usefulness of information. This possible result contradicts the findings of the Stanford et al. (2002) study that showed content was more important than design look for experts. However in my study, teachers time spent viewing the Web sites, indicated that they both have the potential to be equally important. The only difference is that first a Web user typically assesses the credibility of design look before they can make a credibility assessment about usefulness of information. In this way each stage of credibility assessment works as a gate keeper for the next layer of credibility assessment.

RQ3 did not significantly explore Fogg’s (2003) Prominence-Interpretation Theory. However, it did open up the possibility of future exploration of whether or not there is such a concept of “non-prominence interpretation,” whereby a Web site user notices something is missing from the Web site and because of this, they make a credibility assessment.

The comments made in response to RQ3 and RQ4 shed a good amount of light on why the Smithsonian Institute’s Education Web site did so well in the overall rankings of the Web sites in the survey. What stuck out in the teachers’ comments is that they want quick and easy access to resources that come from a Web site that is devoid of bias. They do not have a lot of time to “mine” or “dig” for the resources they are looking for. Most
importantly they want resources that reflect what age group/grade and subject they are teaching. In this way the Smithsonian Institute’s Education Web site provided a simple homepage that allowed teachers to quickly search for material by subject or grade. Add this to the fact that in light of the new “No Child Left Behind” law, it was the only Web site that allowed teachers to search for lesson plans based on the standards of the state they are teaching in. This added feature may affect credibility rankings for educational Web sites more in the future, if the “No Child Left Behind” law remains in effect over a longer period of time.

Limitations

Aside from the limited time frame that this study was conducted in, the main limitation in trying to duplicate the Fogg et al. (2003) and Standford et al. (2002) studies is that their research was very well funded. This made it easier for them to obtain participants as they told each prospective participant that they would make a donation to the charity of the participant’s choice if the participant took part in the study. This gave the participant incentive to complete the survey.

Because this study did not provide financial incentive to participate there was a large proportion of participants who did not complete the study. In fact many of the potential participants seemed to be wary of filling in the comment section of the survey. Many participants who dropped out answered the first few quantitative questions with no problem but when confronted with comment boxes their lack of participation was quite noticeable. Of the 77 participants who began the survey only 48 completed it. This large drop off in participation greatly reduced the significance of all the findings that related to the quantitative research. For example the large number of categories for the variable of
"subject area taught," there were not enough participants to compare the results for significance.

Another limitation to the survey was Survey Monkey's lack of ability to compare the Web sites randomly. Having to add questions to increase the randomization of the Web sites presented in the survey may have led to the participants' survey fatigue. Also asking the teachers to provide open-ended comments about their rankings of the Web sites weighted each comment as having the same significance to the teacher in their credibility assessment. Whereas a more focused approach could have asked for one single factor that was most important in the teacher's credibility assessment. This would have given that comment more significance as well as cut down on teachers having to write, thus cutting down on the survey fatigue of the participant.

The other major limitation to this study was that I believe that the survey question for RQ3 was too indirect. This question asked, "If you had the opportunity to make suggestions to a Web site designer that would make a Web site in the educational field for Global Citizenship look more credible, what would it be?" Again this question was trying to find out if items that were not seen on the Web site affected the teachers' assessment of credibility. This was a very tricky question to ask because it may have come off as a biased question (Baxter & Babbie, 2004) if asked directly, because the teachers might feel that they have to give an answer, when there is the possibility that they did not use that form of analysis when assessing the credibility of the Web sites. This indirect wording of the question in the survey may have been adequate to assess the phenomena being researched. However, the low number or participants greatly reduced its potential to explore this research question further.
Suggestions for Future Study

In terms of future studies, there is a long way to go in regards to credibility assessments and educational Web sites (in particular Web sites that present curriculum for teachers on Global Citizenship). I would suggest that future studies explore the amount of time a person views a Web site and the focus of their comments on the credibility of said Web site. This could help to explore if Web site credibility is assessed in stages, or if it is assessed unilaterally. Another important area future studies could look at is the degree to which a teacher's subject area affects their credibility assessment. Although the study was not large enough to be representative, math teachers tended to feel disenfranchised with the resources and information provided by the six organizations in my study. It would be very interesting to see if an organization would be more successful in designing fewer resources for specific subject areas or if they would be more successful if they designed resources for cross disciplinary subjects, and how might this approach affect teachers in elementary school, whose curriculum is more cross disciplinary, compared to high school teachers whose subject areas are more well defined.

For future research that is directed at the field of Global Citizenship and the design of Web sites that promote this curriculum, the door is wide open for the possibilities. I believe this to be true, especially in terms of the resources provided. It would be fascinating to find out if teachers are more interested in using interactive resources as opposed to straight lesson plans. My study showed that some teachers wanted to be connected to other classrooms, but the question remains, how? Do the teachers want to be connected via e-mail, on-line chat, or video? Would this be an exchange between individuals or an exchange between classes?
In one of the more telling responses a teacher explained that he was trained by the Smithsonian Institute to use their educational Web sites. I believe it would be very beneficial to study how much of an effect this has on teachers desire to use curriculum from these types of Web sites.
CHAPTER 6. APPENDICES

Appendix A

Participant’s Consent Form

1. Participants Agreement

This research project is being conducted by Rusty Kent as part of his Master Thesis study for the School of Communication at the University of Hawaii, Manoa.

The purpose of this study is to explore:
1. Teacher’s evaluations of Credibility for Educational Web sites.
2. What teachers would like to see on an Educational Website to increase credibility.

This survey consist of 14 questions in total. Completion of the questionnaires should take about 15 to 20 minutes. Approximately 100 people will participate in the study. No personal identifying information will be included with the research results. The researcher believes there is little risk to participating in this research study. Participating in this research may be of no immediate benefit to you. It is believed, however, the results from this project will help organizations that design educational Web sites better understand teachers’ perspectives of credibility, thus increasing the potential of their educational sites.

Research data will be confidential to the extent allowed by law. Agencies with research oversight, such as the UH Committee on Human Studies, have authority to review research data. All research records will be stored in a locked file in the primary investigators office for the duration of the research study. All other research records will be destroyed upon completion of the study. Participation in this research study is completely voluntary. You are free to withdraw from this survey if you would like to leave the survey at any time. Just click "Exit this survey."

If you have any questions regarding this research study, please contact the researcher, Rusty Kent at 808-922-1894. If you have any questions regarding your rights as a research participant, please contact the UH Committee on Human Studies at 808-956-5007 or by e-mail at: uhethics@hawaii.edu. Please save or print this page for your records.

By clicking next, I understand that you have read and understand the above information, and agree to participate in this survey.

Thank you for your participation.

Next >>
Appendix B

Survey Questions

1. Please choose one box for the grade level that you teach. If you teach more than one grade level please choose the grade that you teach more predominately.

- Kindergarten
- 1st Grade
- 2nd Grade
- 3rd Grade
- 4th Grade
- 5th Grade
- 6th Grade
- 7th Grade
- 8th Grade
- 9th Grade
- 10th Grade
- 11th Grade
- 12th Grade

2. What subject do you teach? For Elementary school please select "General," for Middle school and High school please select the subject area that you most predominately teach. Please select only one subject.

- General
- Math
- Science
- English/Language Arts
- Social Studies
- Art
- Health
- Physical Education
- Vocational Classes
- Special Ed.
- Other
This page will ask you some demographic questions:

1. What is your gender?
   - Male
   - Female

2. What state do you teach in?

3. How long have you been teaching?
   - 1-5 yrs
   - 6-10 yrs
   - 11-15 yrs
   - 16-20 yrs
   - 21-25 yrs
   - Over 25 yrs

4. How much of your overall classroom curriculum (one school year) comes from educational web sites (These are resources that you found on the web sites and then used them to teach your classes)?
   - None
   - Less than 5%
   - Less than 10%
   - Less than 20%
   - Less than 30%
   - Less than 40%
   - Less than 50%
   - More than Half
1. To help make the survey more random, please choose either #1 or #2.

2. To help make the survey more random, please choose a number that corresponds with the last digit of the day you were born. (For example, if you were born on the 26th, you would answer 6. If you were born on the 14th, you would answer 4. If you were born on the 10th, 20th, or 30th, you would answer 0.)
Educational Web site Credibility

Please visit these three Educational sites below, then come back to this page and rank them from most to least credible as a teaching resource. In other words, look at the sites and decide which one is the most trustworthy and has the most expertise. You will be asked to rank a total of 6 web sites.

Group 1 of 2

* 1. Please Rank the three Web sites in order from 1-3.
   1=most credible, least trustworthy, least expert
   3=least credible, most trustworthy, most expert.

<table>
<thead>
<tr>
<th></th>
<th>1: Most Credible</th>
<th>2</th>
<th>3: Least Credible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smithsonian Inst Education</td>
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<td></td>
</tr>
<tr>
<td>Ofan UK Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World Bank's You Think for Teachers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 2. Please share your comments as they pertain to your ranking of the credibility of these web sites.

[Blank text field]
Educational Web site Credibility

38 Educational Web sites

Please visit these three Educational sites below, then come back to this page and rank them from most to least credible as a teaching resource. In other words, look at the sites and decide which one is the most trustworthy and has the most expertise. You will be asked to rank a total of 6 web sites.

Group 2 of 2

1. Please rank the three Web sites in order from 1-3.
   1=most credible, most trustworthy, most expert
   3=least credible, least trustworthy, least expert.

<table>
<thead>
<tr>
<th>1=most credible</th>
<th>2</th>
<th>3=least credible</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Nation's Cyber School Bus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Peace Corp's World Wise Schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Geographic Society's My Wonderful World</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Please share your comments as they pertain to your ranking of the credibility of these web sites.

Next >>
1. If you had the opportunity to make suggestions to a web site designer that would help make a site in the educational field of Global Citizenship more credible, what would you suggest?

2. If you had the opportunity to make suggestions to an organization designing a web site for teachers that teach about Global Citizenship, what types of resources would you like them to provide you as a teacher?

49. Web Sites’ Usefulness

* 1. Do you agree or disagree that you will use at least one of these Web sites provided in this survey to help you conduct curriculum in your class room?

   - Very Strongly Agree
   - Strongly Agree
   - Agree
   - Unsure
   - Disagree
   - Strongly Disagree
   - Very Strongly Disagree

* 2. Approximately, how many minutes (per web site) did you spend looking at each web site?

   Average minutes per web site
REFERENCES

A practical plan to achieve the millennium development goals: Overview report-Why the goals are important. (2005). Retrieved July 15, 2007 from the United Nation’s Millennium Project,


