

WEB 2.0 DEFINITION, USAGE, AND SELF-EFFICACY: A STUDY OF
GRADUATE LIBRARY SCHOOL STUDENTS AND ACADEMIC
LIBRARIANS AT COLLEGES AND UNIVERSITIES WITH
ALA ACCREDITED DEGREE PROGRAMS

by

CLAY DAVIS

A DISSERTATION

Submitted in partial fulfillment of the requirements for the degree
of Doctor of Philosophy in the Department of Educational
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Submitted by Clay Davis in partial fulfillment of the requirement for the degree of
Doctor of Philosophy in the Department of Educational Leadership, Policy and
Technology Studies Accepted on behalf of the Faculty of the Graduate School by the
dissertation committee:

J. Gordon Coleman, Jr., Ed.D.

Vivian H. Wright, Ph.D.

Cecil Robinson, Ph.D.

Julia A. Hartman, Ph.D.

Margaret L. Rice, Ph.D.
Chairperson

Stephen C. Tomlinson, Ph.D.
Department Chairperson

Date

Date

David A. Francko, Ph.D.
Dean of the Graduate School

LIST OF ABBREVIATIONS AND SYMBOLS

α	Critical p value for statistical analyses
R^2	R Squared: used to gauge the predictability of a regression
F	Fisher's F ratio: A ratio of two variances
M	Mean: the sum of a set of measurements divided by the number of measurements in the set
SD	Standard Deviation
θ	Roy's Largest Root: a test of variance
η^2	Partial Eta Squared: used to determine effect size
P	Significance value
ALA	American Library Association

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ABSTRACT

The topic of Web 2.0 has been studied several times within the field of library science, but there are several areas that warrant additional research: (a) examining definition of Web 2.0; and (b) providing baseline descriptive data for Web 2.0 usage; and (c) addressing psychometric concerns with measures of self-efficacy of Web 2.0; and (d) investigating the predictive quality of Web 2.0 self-efficacy towards Web 2.0 use within the aforementioned parameters for both Academic Library Association Accredited graduate library school students (students) and academic librarians (librarians) at institutions with Academic Library Association Accredited graduate library schools. These concerns formed the basis of this dissertation research.

Data were collected from two populations: ALA accredited graduate library school students at all the ALA accredited graduate library school students ($N = 6232$), and academic librarians from institutions with ALA accredited graduate library schools ($N = 2601$). This research resulted in the creation of a Web 2.0 definition instrument, a Web 2.0 usage instrument, and 7 Web 2.0 self-efficacy tool instruments. Each instrument extracts information about Web 2.0 as it pertains to library science. Since Web 2.0 is such a broad topic, seven of the Web 2.0 tools were chosen for concentration within this research. Overall results from definition indicate that the strongest agreement toward definition of Web 2.0 was the term “information sharing”, whereas librarians felt that “user-centered-web” was a more suitable definition, and students felt that “information sharing” was a more suitable definition for Web 2.0. Overall Web 2.0 was being used among the library science population (at least 1 hour per week for social networking). With regard to self-efficacy toward Web 2.0, students mean self-efficacy items ranged from 2.35 (understanding of rss validation), to 4.49 (understanding why people use social networking sites), whereas librarians mean self-efficacy items ranged from 2.47 (ability to validate rss) to

4.35 (understanding of why people use wikis). Results showed that Web 2.0 self efficacy was not a predictor of Web 2.0 usage. Finally, this research provided baseline data for future research in Web 2.0 for library science. The results suggest that library science educators and library science practitioners may want to consider how Web 2.0 can be incorporated into library science.

ABSTRACT OF DISSERTATION
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Degree: Doctor of Philosophy **Major Subject:** Instructional Leadership

Name of Candidate: Jonathon Clay Davis

Title of Dissertation: **WEB 2.0 DEFINITION, USAGE, AND SELF-EFFICACY: A STUDY OF GRADUATE LIBRARY SCHOOL STUDENTS AND ACADEMIC LIBRARIANS AT COLLEGES AND UNIVERSITIES WITH ALA ACCREDITED LIBRARY SCHOOLS**

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Abstract Approved: Chair of
Dissertation Committee _____
Margaret L. Rice, PhD.

Head of Department
Or College _____
Stephen C. Tomlinson, Ph.D.

Date _____ Dean of the
Graduate School _____
David A. Francko, Ph.D.

CHAPTER 1

INTRODUCTION

Learning technologies were developed to help increase learning outcomes in educational settings (Appleton, 2003). Learning technologies at the beginning of the twentieth century were such tools as chalk and a chalkboard; however, by the end of the twentieth century, learning technologies had expanded more and more into the use of electronic means for adding to the learning experience. As the twenty first century has emerged, learning technology has relied more and more on computers and the internet (Ankolekar, Krötzsch, Tran, & Vrandecic, 2008). From the twentieth century through the twenty first century, learning technologies have had a history of successes and failures (Hermann, Painter, & Kroski, 2007). Ralph and Olsen (2007) state that for a learning technology to be successful, the learning technology must have the following characteristics: (a) clear definition, (b) easily adaptable and widespread use and application, and (c) a feeling of competency with the learning technology. Since the inception of alternative ways of educating using audio-tape, then videotape, then satellite, then video over telephone, and computer and now the Internet, researchers have been trying to figure out how these methods affect the learning process (Hess, Rotherham, & Walsh, 2004). While significant research has been conducted, to date, according to Russell (1999), no significant difference has been found between strictly online learning vs. traditional classroom learning and questions still remain as to whether technology affects the learning process. The scope of this study will not examine whether online education is quality education (Yang, 2004), or whether online education can increase

incidental parameters of the learning process such as learning goal orientation, enjoyment, usefulness, or ease of use (Yi, 2003). Rather, the scope of this study examines the topic of Web 2.0 as both a learning technology (a tool to help learning) and a technology to learn (content to learn about).

What is Web 2.0?

Web 2.0 is simply understood as “a bottom up organization of tools and activities that are housed on the Internet” (Orr, 2007, p. 53). O’Reilly (2005) further explains that Web 2.0 is more than tools and technology on the internet. Web 2.0 is also a way for individuals to connect, communicate, and collaborate in ways that were limited with Web 1.0.

How Does Web 2.0 Relate to Library Science?

More specifically, within the domains of academic libraries and graduate library school, there are even more definitions of Web 2.0. According to Maness (2006), some academic librarians define Web 2.0 as an idea, or a way to think about something in a new way. Yet still other academic librarians see Web 2.0 as another added task (Bove, 2005). In graduate library studies, according to Hodgkinson (2007), some students see Web 2.0 as many parts (such as Myspace, Facebook, Librarything.com). However, according to Russell (2006), there are some graduate library school students who feel that Web 2.0 is a way of thinking about the web as a whole, not one specific thing. Additionally, according to Stephens (2006), Web 2.0 is not only a way to provide input into the world wide web through commenting features and easy to use input forms, but it is also a way to aggregate the information on the world wide web in a very organized, immediate, and personal way through things called feeds. Feeds are simply defined as

specially crafted alert systems within Web 2.0 that enable subscribers of these feeds to know when new content has been added to a feed. In essence, Web 2.0 could be understood as using the world wide web to extend human interactivity through conversations, interpersonal networking, personalization, and individualism (Abram, 2007).

As mentioned earlier, some graduate library school students define Web 2.0 as the features of one of the tools such as a blog or a wiki, however, MacManus (2005) wants individuals to keep in mind that Web 2.0 is a culmination of the tools and the activities that go along with the tools, not just the tools themselves. There is a considerable difference noted when examining the uses of Web 2.0 in Thomsen's (2002) research and Huffman's (2006) research. For instance, in 2002, Web 2.0 was in its infancy, and there were just a few Web 2.0 tools and applications available, let alone being used (Thomsen, 2002). However, by 2006, both the tools available for Web 2.0 and the usage of those tools had grown tremendously. In graduate library school education, blogs appear to have a prominence in either supplementing the traditional paper writing procedures, or in some cases, the blogs may actually take the place of the traditional physical paper that students hand in, and allow students to virtually turn in writing assignments (Oravec, 2003). As for Libraries, wikis allow internal communications and collaboration among librarians. According to Bluemenstein (2007), in addition to using wikis for internal communications, librarians are also taking a larger authorship on such publicly editable wikis as Wikipedia. According to Maness (2006), the one thing that perplexes most adopters of Web 2.0, after getting past the huge buffet of Web 2.0 tools, is figuring out what each tool does, and how to use it most effectively. Web 2.0 tools tend to be very

specific in audience, scope, and purpose. Because there are so many Web 2.0 tools that are similar, but slightly different, it is often times the slight differences that leave the user confused as to which Web 2.0 tool to choose (Huffman, 2006).

Self-Efficacy and Its Role with Learning Technologies

It is Bandura (1977) who suggests that self-efficacy is a conduit for predicting learning outcomes and for measuring perceived competency towards a topic. When examining self-efficacy and online learning, one inevitably encounters the model of self-regulation, and learns how self-efficacy is one of the building blocks to successful self-regulation, and how self-efficacy impacts the success of the online course (DeTure, 2004). In synthesizing these previous studies, a clearer understanding develops of how self-efficacy is related to the integration of technology into the learning process. For example, it is common for one to hear such a question as this: “What is the motivation to use technology in the classroom?”, as technology integration is met by resistance from both teachers and students (Thompson, 2003). Research also shows that the maintenance and dependability of the technology is correlated with how trusting teachers and students feel about using the technology in the learning environment (Richardson, 2004).

Purpose

Although specific Web 2.0 tools as learning technologies have been widely researched in educational and professional journals (examples include: blogging, wikis, video sharing), an overarching question still remains as to whether Web 2.0 as a whole should be given attention in the context of library science education. According to McKinney (2006), the best way to determine what curriculum is best for the library school student is to first examine what library practitioners are actually doing in the field.

Technology in library science affords not only the ability to be a piece of the curriculum (something that is studied in class), technology also can be a tool to help learning in the library school classroom (Lewis, 2007). The purpose of this research was to take the topic of general learning technologies and concentrate more focus on Web 2.0 by gaining perceptions of Web 2.0 definitions, usage of Web 2.0, and self-efficacy toward Web 2.0 by academic librarians in ALA accredited Colleges and Universities and by graduate library school students in ALA accredited Colleges and Universities. The intent for this study was to determine if: (a) there is a common understanding of the definition of Web 2.0 in Library Science, (b) there is a trend regarding quantitatively measureable frequency of use of Web 2.0 in Library Science, and (c) there could be a link/correlation between self-efficacy and Web 2.0 usage in Library Science. An overarching question that formed the looking glass for data analysis was: “Could Web 2.0 be a tool for aiding the profession and as content to be learned in the library science field?”. Appendix F contains a theoretical framework of how all of the survey items are related. Below is a concise description of how each attribute was assessed in three separate articles which shape chapters two through four of this dissertation.

Chapter 2: Examining the Perceptions of Academic Librarians and Graduate Library School Students Regarding the Definition of Web 2.0

The purpose of Chapter 2 was to use an existing general technology self-assessment scale and focus on a Web 2.0 definition to be more in line with Ralph and Olsen’s (2007) view of successful learning technologies and with Tileston’s (2000) notion that content cannot be learned until it is properly defined. The following pages introduce the concept of Web 2.0, review literature that validates the Web 2.0 definition

survey instrument, and describes how this current research attempted to address these concerns.

Web 2.0 Definition

When Michael Russell (2006) of Ontario, Canada reflected back on how much he had heard about Web 2.0, he noted that he only scratched the surface while he was in graduate library school, and only after creating his blog after graduation, had he begun to learn about Web 2.0 with more depth and practical understanding. Hodgkinson (2007) comments on his blog that so many times Web 2.0 is defined by a tool, instead of the large grouping that includes that tool. These varied and often confusing multiple definitions for Web 2.0 are further emphasized if you try to track even one component of Web 2.0, such as “blogging,” as you get varied or conflicting results on definition, year of inception, and proposed purpose (Lunsford & Bruce, 2001; McCullagh & Broache, 2007; Pace, 2001; Rosen, 2004).

Existing Technology Self-Assessment Scale

Based on this preliminary literature review on the existing definition of Web 2.0 and the obvious unanswered question of “just what is Web 2.0?” more data needed to be gathered on the definition of Web 2.0. In order to gather these data, a Web 2.0 survey instrument was constructed based on previous research from Kraemer, Lombardo, and Lepkowski (2007). Kraemer et al. (2007) developed a survey instrument to extract what respondents understood in regard to a library website, based on a choice of up to five key areas of understanding. Respondents in Kraemer et al.’s study could choose as many or as few of the key areas as they felt necessary. Kraemer et al.’s instrument is constructed with several key areas of interest on the library website such as a library virtual tour, top

ten facts, voyager basics, and many others. Within each section, a self-assessment question was asked with Likert responses ranging from: “I need a lot of help getting started,” all the way to: “I am thoroughly able to research in the library.” The goal of the instrument was not to gauge user confidence or satisfaction, but rather to gauge whether the technology training was adequate to help patrons gain an understanding of the library website.

Weaknesses and Strengths of Existing Technology Self-Assessment Scale

Weaknesses

Kraemer et al.’s (2007) survey instrument was designed around self-assessment of online learning technology. For example, an original item might have stated “Please finish the following statement: “When I think of my understanding with voyager... A.) I need a lot of help getting started, B.) I need some help getting started, C.) I am somewhat able to do research in the library, D.) I am thoroughly able to do research in the library.” One primary flaw with Kraemer et al.’s self-assessment is the semantic structure of the instrument items. According to Davis, Wilson, and Horn (2005), it is less effective to pair broad statements with broad supplemental choices, for what you end up with is broad, blanket response sets, which are not very useful in statistical research. Davis et al.’s mal-appropriate generalization effect may be what contributed to the large increase in self-assessed knowledge perception from pre-test to post-test during the study. Additionally, in Kraemer et al.’s study, the statistical reliability and validity were not discussed. The researchers considered these survey items to be qualitative information instead of using them as quantitative data, since these items depicted understanding

instead of the more finite and quantitative items on the formal examination test included in the overall instrument.

Strengths

One of the main benefits of Kraemer et al.'s (2007) survey instrument items on self-assessment is the fact that self-assessment is a starting point for the definition items for Web 2.0. Secondly, Kraemer et al. do provide some statistical evidence that these self-assessment questions are sound enough in wording that they do illustrate a difference in response from pre-test to post-test. In cases where the items have been worded too poorly, no matter what the reality is of pre-test to post-test understanding, the respondents would not have been able to differentiate between responses, so the response set would have typically stayed the same from pre-test to post-test (Hildreth, 2007). Finally, Kraemer et al.'s survey items are helpful because each is poised in a library setting. When constructing survey instruments it is important to try to start with a working model that is centered in the domain in which one is studying (Davis et al., 2005).

Modifying the Technology Self-Assessment Scale

Modification of items from Kraemer et al.'s (2007) instrument has adapted the focus from general library technology to the focus of Web 2.0. By creating several possible definition choices for Web 2.0 and asking the respondent to rank his or her agreement with these statements, both qualitative information (definition of Web 2.0), and quantitative information (self-assessed agreement with the definition statements) can be gathered at the same time. Combining qualitative and quantitative response sets has been shown to increase statistical significance (Franklin & Plum, 2006). To establish a starting point for the semantics of the definition survey instrument, a pilot study was

conducted with graduate library school students to determine what was considered to be reasonable choices for the response of: “how do you define Web 2.0?”. Results for this pilot study are included in Table 1.1.

Table 1.1
Pilot Study Results for Definition of Web 2.0

Definition	n	%
Read/Write web	12	18.8
The Net Is The Computer	1	1.6
Tools On The Web	8	12.5
A Passing Fad	1	1.6
The Interactive Web	3	4.7
Social Networking	9	14.1
Information Sharing	7	10.9
Web as a Full-Fledged Computing Platform	9	14.1
User Centered Web	10	15.6
The People's Web	1	1.6
Database Driven Web	1	1.6
The New Web	2	3.1
Total	64	

Based on the results of the pilot study, the revised item used in this Web 2.0 study was revised to state, “Please rate below the degree to which you agree or disagree with each of the following statements: A.) Web 2.0 can be defined as the read/write web, B.) Web 2.0 can be defined as social networking, C.) Web 2.0 can be defined as information sharing, D.) Web 2.0 can be defined as using the web as a full-fledged computing platform, E.) Web 2.0 can be defined as the user-centered web, F.) Web 2.0 can be defined as tools on the web, G.) Web 2.0 can be defined as _____ (write your own).” Next to each statement of what Web 2.0 is defined as is a Likert scale from strongly disagree to strongly agree. (See Appendix A)

How Will the Web 2.0 Definition be Derived?

The purpose of Chapter 2 was to address the concerns listed above by answering the following research questions.

Research Question 1a: How do academic librarians and graduate library school students as a group define Web 2.0?

Research Question 1b: Are there differences between how academic librarians and graduate library school students define Web 2.0?

Method and Analyses

Participants

The intent of the research was to study Web 2.0 and its interaction with the library science population. Since library science is such a broad area, the focus was narrowed down to specifically concentrate on two of the main components of this area, graduate library school students, and academic librarians. It was felt that these two groups represented both the birth of library science (as noted in the students) and the practice of library science (as noted in the librarians). The researcher chose institutions whose graduate library school programs were American Library Association (ALA) Accredited, so that it could be assumed that if the graduate library schools had attained ALA accreditation, the graduate library schools met certain core requirements. After discussing the topic of this research with several academic librarians and graduate library school students, it was determined that there was indeed a link between the graduate library school students and the academic libraries at the institutions. Since a link was established between the academic librarians and the graduate library school students, it

was then determined that the focus for the research needed to be on academic librarians and graduate library school students at institutions where the graduate library school was ALA accredited.

There were varying opinions as to exactly what an Academic Librarian was defined as, therefore, in order to be as objective as possible when creating the respondent participation request list, a web crawling script was created to search the library sites at the institutions with ALA accredited library schools and grab all of the names and addresses and titles of individuals whose title included "librarian" in the title. Once the master list was created, the list was then culled to remove such occurrences as "assistant to the librarian" as listings such as this indicated a clerical staff, not an Academic Librarian. Deciding who was a graduate library school student presented less of a challenge, as graduate library school students are enrolled in classes and are identified as such by class roles of an instructor or faculty member.

Since all members of each group were given the opportunity to participate, there were generous data to interpret. Of 17,000 students possible, there were 6232 usable responses, which equates to about 37% of the total student population. There were a total of 7079 respondents who took the survey, where 847 responses were not included because of incomplete data or the respondent did not take the entire survey. The ALA graduate library schools totaled 62 at the time of this study, and confirmation to participate in the study was received from 39.

Of 3,421 librarians possible, there were 2601 usable responses, which equates to about 76% of the librarian population. There were a total of 2979 respondents who took the survey, where 378 responses were not included because of incomplete data or the

respondent did not take the entire survey. Due to anonymity of responses, it was not possible to determine which academic libraries participated. Demographic data are shown in Table 1.2.

Table 1.2
Demographic Information for the Combined Population

	Academic Librarians (n=2601)		Library Students (n=6232)		Total
	%	n	%	n	n
Identity Association					
Female	72.1	1875	88.6	5521	7396
Male	25.7	669	11.4	711	1380
Trans	2.2	57	0.0	0	57
Degrees Held					
Humanities	56.2	1461	56.0	3490	4951
Social Sciences	49.9	1298	39.2	2442	3740
Combined Degree	10.5	274	11.9	740	1014
Education	16.3	424	18.8	1174	1598
Highest Degree Attained					
Doctoral	5.0	131	2.0	124	255
Master's	77.9	2027	44.5	2772	4799
Undergraduate	15.3	398	47.0	2929	3327
Degree Not Listed	1.7	45	6.5	407	452
Ages					
	<u>Academic Librarians</u>		<u>Library Students</u>		
M	43.0		33.0		
SD	12.0		9.0		
Range	22-64		23-62		
Combined Degree Itemized					
	<u>Academic Librarians</u>		<u>Library Students</u>		
	%	n	%	n	
Natural Sciences	6.7	175	6.7	420	
Business	1.1	28	5.1	315	
Engineering	0.4	11	0.1	5	
Law	1	25	0.0	0	
MD	1.3	35	0.0	0	

Data Collection Procedures

One base survey was constructed with the general theme of definition of Web 2.0. Then, that base survey was reworded and tailored to match librarians and the students. The end result was that two separate surveys were constructed: one concentrating specifically on academic librarians and the other concentrating specifically on graduate library school students.

A master address list for the academic librarians was created by scanning the websites of the academic libraries at the institutions with ALA accredited graduate library schools. The librarians were then contacted by the researcher via a bulk email for the initial request for participation in the study, and were provided a URL by which to take the anonymous online survey.

The researcher contacted the chair of each department/school for library and information studies via email (sample email found in Appendix D) for the initial request for participation in the study, and provided a URL by which to take the anonymous online survey. Then, the chair was asked to contact each professor actively teaching classes during that semester and asked that each professor email his or her students the URL for the online survey. Participants were informed that by clicking “submit” on the online survey, they were consenting to and agreeing to participate in the study.

Data Analysis Procedures

To determine the overall perception of the definition of Web 2.0 and address research question 1a, frequencies were run to illustrate mean agreement with the six Web 2.0 definitions. Content validity was supported by five independent subject matter

experts in Library Studies, Educational Psychology, Instructional Technology, Higher Education, and Educational Research. In order to determine more detailed and robust comparisons between librarians and students with regard to agreement of definition of Web 2.0, a multivariate analysis of variance was run in SPSS with the dependent variables of Web 2.0 definition (“Read/Write Web”, “Social Networking”, “Information Sharing”, “Full-Fledged Computing Platform”, “User-Centered Web”, and “Tools on the Web”) and the independent variables of Gender (male or female), Classification (Librarian or Student), and Highest Degree (Undergraduate or Masters). The original demographics did have a category of gender “Trans.” After examining the data in total, it was determined that the Trans group represented less than one half of one percent of the total sample. Therefore, Gender was limited to male or female. There were several options for indicating highest degree (“High School”, “Associates”, “Undergraduate”, “Masters”, “Doctoral”), however, there were no “High School” or “Associates” respondents, and it was determined that the “Doctoral” group, could be folded in with “Masters” respondents. In order to control for Type 1 error and to create a more stringent *p* value, the standard *p* value of .01 was divided by 10 (number of tests run in MANOVA) to arrive at the new *p* value of .001. All significance was gauged against the .001 *p* value, which is also the most stringent *p* value that SPSS can report.

Chapter 3: Web 2.0 Usage by Academic Librarians and Library School Students in Universities with ALA Accredited Degree Programs

The purpose of Chapter 3 was to examine usage of Web 2.0 by academic librarians and graduate library school students. By modifying a general technology usage scale and shifting the focus to Web 2.0 usage, more information could be gathered to help

determine whether Web 2.0 can be a learning technology and content for learning for the library science field. According to (Ralph & Olsen, 2007), one measure of successful learning technologies is the degree to which the learning technology is easily adaptable and has widespread use and application; which is subsequently in line with Lewis' (2007) notion that technology usage prevalence can also indicate an appropriate area of content to learn about. Basically, what Ralph and Olsen (2007) and Lewis (2007) are suggesting is that if a learning technology has a high frequency of use and is easy to use, then it could be both a viable tool to help learning, and content to learn about in the area of Library Science.

Web 2.0 Usage

Abram (2007) discusses the fact that as librarians have viewed and interacted with the tools and ideas of Web 2.0, many library science professionals have decided to not only embrace the concepts in the technology, but to take the ideas of community, collaboration, and interactivity to many other aspects of the library besides just the technology. For example, the term Librarian 2.0 defines the library as a place of interactive learning, where patrons are encouraged to be open and share freely, and the information is more freely available as well, instead of thinking of the library as a place where information is stored (Farrelly, 2007). Some simple examples where librarians have been able to use a Web 2.0 idea in both technology and in andragogy of research and learning are: text messaging with patrons to help with reference desk questions, and similarly allowing outside patrons to develop trust accounts with the librarians and field some of the reference desk questions, two concepts that would not exist pre-Web 2.0, but thrive in the "2.0" environment.

Existing Technology Usage Scale

According to Jankowska (2004), there are three main points to consider when surveying respondents about technology usage: a) What technologies are respondents using?, b) How are the respondents using those technologies?, and c) how often are those technologies being used? Jankowska's usage survey instrument is designed to query from faculty members in the university community more specifics on what information and communication technologies they use so that the academic librarian would better understand what needs to be addressed when planning and budgeting. Some examples from Jankowska's survey included such items as: a.) "How many hours per week do you use a computer?" (usage ranked from: less than 10 hours, 10-20 hours, 21-30 hours, and more than 30 hours (p. 51); b.) "How do you use computers?" (p. 52), (select as many as used [which were deemed qualitative data]) (variables included communicating with students and peers, working on manuscripts, research proposals and conference papers, and preparing study and instructional materials for students); c.) "Where do you use computers?" (p. 53) (select as many as used [which were qualitative data]) (variables included home and work).

Weaknesses and Strengths of Existing Technology Usage Scale

Weaknesses

In an email response from Jankowska (2007), when asked about the statistical reliability of the survey instrument, Jankowska responded that much of the original research data were not retained when Jankowska relocated. Possibly, included in that research data may have been the reliability information for the survey instrument, therefore, the reliability rating for Jankowska's survey instrument cannot be ascertained.

According to Carmines and Zeller (1979), in order for survey instruments to be of proven merit, reliability and internal consistency must be measured. In her research, Jankowska (2004) also discovered that some of the items in the survey were confusing to participants, yielding either incomplete data because of no response, or yielding skewed responses as participants incorrectly inferred what the item was querying.

Strengths

In addition to reliability and internal consistency, validity of a survey instrument must be evaluated for the instrument to have merit (Carmines & Zeller, 1979). Validity for Jankowska's survey was achieved through a stratified random sampling. According to Laney (1993), stratified random sampling helps promote internal validity by eliminating some of the sources of random sampling error. Another asset in ensuring validity for a survey instrument is content validity. In order to account for content validity, 12 faculty members were interviewed by Jankowska to gather preliminary information for Jankowska's study so that questions for the survey could be gauged more appropriately. Additionally, Jankowska's (2004) survey provides a nice starting point for a study on Web 2.0 usage in library science because Jankowska's audience and population were library science individuals as well. When constructing survey instruments, it is important to try to start with a working model that is centered in the domain in which one is studying (Davis et al., 2005).

Modifying the Technology Usage Scale

When modifying the original technology usage instrument to tailor it for Web 2.0 usage, an original item that might have been stated as: "I use the following technologies," is now rephrased for this Web 2.0 study as: "I use the following Web 2.0 technologies."

When constructing the survey instrument on Web 2.0 usage, several factors were taken into consideration. Two separate surveys were constructed: one set in the theme of academic librarianship and the other in the theme of graduate library education. However, both groups received the same basic type and structure of questions. As often as applicable throughout the Web 2.0 usage survey is the theme of “where do you...?” and the two areas queried in the survey instrument were “work” and “non-work” for the librarians, and “class” and “non-class” for the students. The survey is divided into two main sections, the first section asking overview questions (such as: “Please rank the following Web 2.0 tools with regard to your own use and overall use by others” and “do you...for work/class?” and “do you...not for work/class?”) and the second section asking very detailed questions on each of seven Web 2.0 tools chosen for this study (such as “About how much time each week (in hours) do you spend writing blogs?” and “Which blogging applications do you use at work/class?”). In order to gain an understanding of which Web 2.0 tools to include in this Web 2.0 study, a survey was conducted repeatedly over four semesters at a graduate library school at the beginning of the semester to newly enrolled graduate library school students. The library school students were asked to respond via a free-text box, as to what they considered to be the seven most popular Web 2.0 tools in circulation. Results on frequencies for this pilot study are included in Table 1.3, however, in summary, the seven most popular Web 2.0 tools at the time of the study were: blogs, wikis, social networking, video sharing, social tagging, social bookmarking, and social cataloging.

Table 1.3
Most Popular Web 2.0 Pilot Study Results

Web 2.0 Tool	n	%
Blogging	11	17.2
Video Sharing	8	12.5
Wikis	8	12.5
Social Bookmarking	8	12.5
Social Cataloging	7	10.9
Social Networking	7	10.9
Social Tagging	7	10.9
Communication Tools	2	3.1
Music Sharing	2	3.1
Photo Sharing	2	3.1
Document Sharing	1	1.6
Online Productivity	1	1.6
Total	64	

Within the seven tools analyzed, usage was distinguished by: quantity of time, frequency of individual contributions, quantity of variety of accounts, experience in years, and frequency at which one checks for updates. Supplemental characteristics for usage per tool were included to query: “have you heard of ...?”, and “do you participate at work/class/non-work/non-class?”. A logic schematic is included in Figure 1.1 to further clarify how all of the components of the survey are logically linked together.

Expanded Usage Research Model

Students (Descriptives) Have you heard of Rank usage for self /for others		Librarians (Descriptives) Have you heard of Rank usage for self /for others	
Class	Non-class	Work	Non-work
Which of these	Which of these	Which of these	Which of these
Do you: yes,no,don't know	Do you: yes,no,don't know	Do you: yes,no,don't know	Do you: yes,no,don't know
(Quantity)		(Quantity)	
How many hours per week do you	How many hours per week do you	How many hours per week do you	How many hours per week do you
How many different do you have	How many different do you have	How many different do you have	How many different do you have
How often do you submit	How often do you submit	How often do you submit	How often do you submit
How many years	How many years	How many years	How many years
How many times per day do you check	How many times per day do you check	How many times per day do you check	How many times per day do you check

Figure 1.1 Expanded Usage Research Model

How will Web 2.0 Usage be Derived?

The purpose of Chapter 3 was to address the concerns listed above by answering the following research questions.

Research Question 2a: What are academic librarians' and students' usage of Web 2.0?

Research Question 2b: Are there differences in student and librarian usage?

Method and Analyses

Participants

The intent of the research was to study Web 2.0 and its interaction with the library science population. Since library science is such a broad area, the focus was narrowed

down to specifically concentrate on two of the main components of this area, graduate library school students, and academic librarians. It was felt that these two groups represented both the birth of library science (as noted in the students) and the practice of library science (as noted in the librarians). The researcher chose institutions whose graduate library school programs were American Library Association (ALA) Accredited, so that it could be assumed that if the graduate library schools had attained ALA accreditation, the graduate library schools met certain core requirements. After discussing the topic of this research with several academic librarians and graduate library school students, it was determined that there was indeed a link between the graduate library school students and the academic libraries at the institutions. Since a link was established between the academic librarians and the graduate library school students, it was then determined that the focus for the research needed to be on academic librarians and graduate library school students at institutions where the graduate library school was ALA accredited.

There were varying opinions as to exactly what an Academic Librarian was defined as, therefore, in order to be as objective as possible when creating the respondent participation request list, a web crawling script was created to search the library sites at the institutions with ALA accredited library schools and grab all of the names and addresses and titles of individuals whose title included "librarian" in the title. Once the master list was created, the list was then culled to remove such occurrences as "assistant to the librarian" as listings such as this indicated a clerical staff, not an Academic Librarian. Deciding who was a graduate library school Student presented less of a

challenge, as graduate library school students are enrolled in classes and are identified as such by class roles of an instructor or faculty member.

Since all members of each group were given the opportunity to participate, there were generous data to interpret. Of 17,000 students possible, there were 6232 usable responses, which equates to about 37% of the total student population. There were a total of 7079 respondents who took the survey, where 847 responses were not included because of incomplete data or the respondent did not take the entire survey. The ALA graduate library schools totaled 62 at the time of this study, and confirmation to participate in the study was received from 39.

Of 3,421 librarians possible, there were 2601 usable responses, which equates to about 76% of the librarian population. There were a total of 2979 respondents who took the survey, where 378 responses were not included because of incomplete data or the respondent did not take the entire survey. Due to anonymity of responses, it was not possible to determine which academic libraries participated. Demographic data are shown in 1.4.

Table 1.4
Demographic Information for the Combined Population

	Academic Librarians (n=2601)		Library Students (n=6232)		Total
	%	n	%	n	n
Identity Association					
Female	72.1	1875	88.6	5521	7396
Male	25.7	669	11.4	711	1380
Trans	2.2	57	0.0	0	57
Degrees Held					
Humanities	56.2	1461	56.0	3490	4951
Social Sciences	49.9	1298	39.2	2442	3740
Combined Degree	10.5	274	11.9	740	1014
Education	16.3	424	18.8	1174	1598
Highest Degree Attained					
Doctoral	5.0	131	2.0	124	255
Master's	77.9	2027	44.5	2772	4799
Undergraduate	15.3	398	47.0	2929	3327
Degree Not Listed	1.7	45	6.5	407	452
Ages					
	<u>Academic Librarians</u>		<u>Library Students</u>		
M	43.0		33.0		
SD	12.0		9.0		
Range	22-64		23-62		
Combined Degree Itemized					
	<u>Academic Librarians</u>		<u>Library Students</u>		
	%	n	%	n	
Natural Sciences	6.7	175	6.7	420	
Business	1.1	28	5.1	315	
Engineering	0.4	11	0.1	5	
Law	1	25	0.0	0	
MD	1.3	35	0.0	0	

Data Collection Procedures

One base survey was constructed with the general theme of usage of Web 2.0. Then, that base survey was reworded and tailored to match librarians and the students. The end result was that two separate surveys were constructed: one concentrating specifically on academic librarians and the other concentrating specifically on graduate library school students.

A master address list for the academic librarians was created by scanning the websites of the academic libraries at the institutions with ALA accredited graduate library schools. The librarians were then contacted by the researcher via a bulk email for the initial request for participation in the study, and were provided a URL by which to take the anonymous online survey.

The researcher contacted the chair of each department/school for library and information studies via email (Sample email found in Appendix D) for the initial request for participation in the study, and provided a URL by which to take the anonymous online survey. Then, the chair was asked to contact each professor actively teaching classes during that semester and asked that each professor email his or her students the URL for the online survey. Participants were informed that by clicking “submit” on the online survey, they were consenting to and agreeing to participate in the study.

Data Analysis Procedures

In order to establish baseline statistics, frequencies for demographics and usage were taken for each separate group, librarians and students, using a chi-square cross tab.

Content validity was supported by five independent subject matter experts in Library Studies, Educational Psychology, Instructional Technology, Higher Education, and Educational Research.

In order to determine more detailed and robust comparisons between librarians and students with regard to usage of Web 2.0, a multivariate analysis of variance was run in SPSS with the dependent variables of Web 2.0 usage (“Hours spent per week contributing to Blogs for work/school”, “Hours spent per week contributing to Blogs for non-work/non-school”, “Hours spent per week contributing to Wikis for work/school”, “Hours spent per week contributing to Wikis for non-work/non-school”, “Hours spent per week contributing to Social Networking for work/school”, “Hours spent per week contributing to Social Networking for non-work/non-school”, “Hours spent per week contributing to Video Sharing for work/school”, “Hours spent per week contributing to Video Sharing for non-work/non-school”, “Hours spent per week contributing to Social Tagging for work/school”, “Hours spent per week contributing to Social Tagging for non-work/non-school”, “Hours spent per week contributing to Social Bookmarking for work/school”, “Hours spent per week contributing to Social Bookmarking for non-work/non-school”, “Hours spent per week contributing to Social Cataloging for work/school”, “Hours spent per week contributing to Social Cataloging for non-work/non-school”,) and the independent variables of Gender (male or female), Classification (Librarian or Student), and Highest Degree (Undergraduate or Master’s). The original demographics did have a category of gender “Trans”. After examining the data in total, it was determined that the Trans group represented less than one half of one percent of the total sample. Therefore, Gender was limited to male or female. There

were several options for indicating highest degree (“High School”, “Associates”, “Undergraduate”, “Master’s”, “Doctoral”), however, there were no “High School” or “Associates” respondents, and it was determined that the “Doctoral” group, could be folded in with “Master’s” respondents. In order to control for Type 1 error and to create a more stringent *p* value, the standard *p* value of .01 was divided by 10 (number of tests run in MANOVA) to arrive at the new *p* value of .001. All significance was gauged against the .001 *p* value, which is also the most stringent *p* value that SPSS can report.

Chapter 4: Web 2.0 Self-Efficacy as a Predictor of Web 2.0 Usage Among Academic Librarians and graduate library school students in Universities with ALA Accredited Degree Programs

Chapter 4 had two purposes: a.) to use an existing general technology self-efficacy scale and shift the focus to generate a Web 2.0 self-efficacy scale, and b.) to determine if the Web 2.0 self-efficacy scale developed could be used to predict usage of Web 2.0. One of the qualities of web technologies in library science is that web technologies afford not only the ability to be a piece of the curriculum (something that is studied in class), web technologies also can be a tool to help learning in the library school classroom (Lewis, 2007). According to Ralph and Olsen (2007), one measure of successful learning technologies is the degree of competency one has towards the learning technology. Bandura (1977) states that self-efficacy is analogous with perceived competency. Measuring one’s self-efficacy towards a concept is not only beneficial for application of the concept, measuring self-efficacy toward a concept may also help in learning about the concept as well (Bandura, 1986). Furthermore, Bandura (1977) iterates that self-efficacy can also be a predictor of outcome behaviors, one of them being

usage. Additionally, Ralph and Olsen (2007) state that one measure of a successful learning technology is widespread use of the learning technology, and research from McKinney (2006) provides a notion that technology usage prevalence can also indicate an appropriate area of content to learn about. Basically, what Ralph and Olsen, and McKinney are suggesting is that if a learning technology has a high frequency of use and is easy to use, then it could be both a viable tool to help learning, and content to learn about in the area of Library Science.

Self-Efficacy

Self-efficacy is most commonly referred to as the belief in what one can do (Bandura, 1986). If one were to analyze a situation and look at only the facts of the situation, the individual would not be tapping into self-efficacy. Self-efficacy relies on a belief in one's abilities, and is not believed to be associated with prior experience per se (Bandura, 1986). For example, one might possess a high self-efficacy toward walking a tight-rope, although he or she has never performed the specific task, but has experience walking I-beams on a sky-scraper construction site. Along with a belief in one's abilities, self-efficacy also hinges on the observed outcomes of others. If one sees another succeed in a certain task, and the observer feels that he or she is similar to the observant, then he or she might feel efficacious towards that task as well.

To further clarify self-efficacy, one would look at the reality of how self-efficacy reacts with other ideas of self. For instance, sometimes self-efficacy and outcome predictions don't follow the same trend (Bandura, 1977). Due to a negative outcome prediction, intent might not be transferred to action, not because one didn't have a high self-efficacy, but because the outcome prediction was negative. Lastly, self-efficacy is

also believed to be associated with socialization (Bandura, 1986). Not only by watching others is self-efficacy altered, but even more directly when peers are working together, self-efficacy is altered as well. By examining the core areas that affect self-efficacy (observed outcomes, prior experiences, outcome predictions, and socialization) a conceptual path opens up into this study of self-efficacy of technology. When talking about self-efficacy towards technology what one is really speaking of is the learner's belief in his or her abilities with the instructional technology and with the concept of understanding the technology.

Web 2.0 Usage

According to Elliot (2007), blogs, which are a component of Web 2.0, are being used by librarians to share with others a sort of diary of a day's activities. Another way librarians use a Web 2.0 functionality, commonly found in blogs, is to allow patrons to comment directly into the online public access catalogs about opinions on certain holdings, or for someone to leave a wish list request such as "I wish we had more like these," to let the library staff know what holdings are in great demand (Kajewski, 2006).

According to Balin and Pena (2007), libraries are now able to offer media rich, interactive tutorials to their patrons on how to perform better searches, or even how to use other services provided by the library. Instant Messaging has also allowed many libraries to answer questions from patrons in real time over the internet (Foley, 2002). LibGuides allows Facebook users to browse through "guides" which are basically clusters of research culminated together by the librarian at that institution, which provides a more personal level of service to the Facebook user (Gerry, 2007). Yet, still more uses for Web 2.0 in libraries exist, both in the brick and mortar libraries and in the virtual worlds like

Second Life. In Second Life, a multi-player virtual world, there is an entire land mass called “Information Island” that is dedicated to all things information and includes a virtual library where real librarians take their shift at the “virtual reference desk” (Hildreth, 2007). According to a wiki posting from the 2007 Library Camp in New York City, librarians are using wikis for summer reading clubs, Facebook for virtual reference questions, and are even using online applications such as ZOHO to calculate and share reference statistics (Hermann et al., 2007).

Blogs are valuable for classroom learning because they allow both personal creativity and expression, and social interaction through commenting and linking such as referencing other blogs on one’s own blog (Ferdig & Trammell, 2004). According to Kajewski (2006), among the library science community, just below blogging in popularity are four other Web 2.0 activities: www.librarything.com, technorati.com, wikipedia.com, and del.icio.us. Librarything.com is defined as a social networking tool that also helps one catalog reading material (Cohen, 2006). Basically, Librarything.com is a tool for cataloging books, periodicals, etc., but what is even more interesting about Librarything.com is that it also has a social networking component within its site. Not only can individuals keep track of and organize a collection, they can also connect and communicate with other Librarything.com users and find groups of users with common reading interests.

Technorati is a website that allows visitors to set up an account and mark blogs (Cohen, 2004). Once blogs are marked, then Technorati will allow users to search them. When thinking about the impact of this service, if one only looks at one person adding blogs to be searched, it is not that substantial. However, like most Web 2.0 tools,

Technorati is strong because it has the power of millions of users marking blogs for searches. Wikipedia is an online encyclopedia; the only twist to it is that it allows any logged in user to add to, change, or delete entries in this online encyclopedia. Lastly, delicious is what is commonly referred to as a social bookmarking site (Cohen, 2004). On the delicious site, users can login and create a list of favorite sites. This list can then be shared with other users forming a network of commonly popular websites.

Existing Technology Self-Efficacy Scale

When constructing the instrument for measuring self-efficacy of Web 2.0 for this study, the main domain specific self-efficacy scale used as a starting point was a computer self-efficacy study which looked at the magnitude, strength, and generalizability of self-efficacy with computers (Compeau & Higgins, 1995).

Magnitude in self-efficacy of computing refers to one's belief in his or her ability to complete a certain number of computer tasks without supervision or guidance (Compeau & Higgins, 1995). For instance, one with a self-efficacy of 70 in magnitude might perceive he or she is able to operate more items without guidance, than those that rate below 70 in magnitude. With strength, the measurement goes one step beyond magnitude; the instrument examines how well one believes he or she can do tasks with a computer. The third area of measurement to extract from the learner is self-efficacy generalizability. In this measure, how well the learner believes he or she can apply a skill across to other platforms, or applications, or hardware can be examined.

Weaknesses and Strengths of Existing Technology Self-Efficacy Scale

Weaknesses

One of the weaknesses noted in Compeau's and Christopher's (1995) survey and other surveys in general is the issue of non-response bias, as late responders are sometimes equated to non-responders because both types of responders are solicited via prompting. Additionally, survey research is plagued from the beginning, even when participation is voluntary, and mail-out survey responses have at best a 75% rate of return (Dillman et al., 2001). Another issue with mail-out surveys is the lag in time between when the survey is mailed out to the respondent, when the respondent actually receives the survey, when the respondent actually fills out the survey and mails it, and when the researchers receive the respondent's completed survey, as timeliness is helpful when modifications to survey instruments need to be made.

Strengths

Compeau and Christopher's (1995) survey was based on a literature review of five previous computer self-efficacy scales. Additionally, Compeau did two pilot studies for testing the items for the instrument, one with a sampling of 40 respondents with the original items and constructs, and a second one with a sampling of 100 participants from the intended sampling frame to gain additional feedback and to help calculate a probable return rate on mailings of the survey instrument. To help gain an even more detailed critique of the items, Compeau interviewed five of the respondents and inquired about apparent clarity and effectiveness of the survey. After determining a reasonable number of desired responses, Compeau doubled this number so that when the survey was released to the intended audience, the first half of the survey responses could be used to revise the

instrument so that it could be made stronger for the second half of the intended responders. High reliability (internal consistency) and validity (construct) were established through the thorough pre-development of the survey instrument.

Modifying the Computer Self-Efficacy Scale

This study will look at self-efficacy towards Web 2.0. In conducting this self-efficacy research, the researcher is actually extracting from one's mind, the level of self-efficacy towards a technology enhanced learning tool and self-efficacy towards understanding that tool. Measuring self-efficacy is difficult, because self-efficacy must be measured through self-report (Bandura, 2001). However, the key to getting accurate data from the learner on self-reported self-efficacy is to ask the participant questions that bring out the topic of self-efficacy via several ranges of questions.

Compeau and Christopher (1995) developed an instrument to measure self-efficacy toward technology, which has been modified for this study to examine self-efficacy toward Web 2.0. Compeau used three categories to measure self-efficacy - Magnitude, Strength, and Generalizability - and these same categories are used in the survey instrument developed for the current study with a focus on Web 2.0. For example, an original item might have stated "I believe I am able to save files to removable media," and the revised item for this Web 2.0 study now states, "I believe I am able to post to a blog." However, one aspect that has been added to this Web 2.0 survey instrument that was not included on the original instrument by Compeau is the idea of understanding self-efficacy. This Web 2.0 survey instrument builds on the previous computer self-efficacy scale by trying to query from the respondent not only can he or she "do" a certain task, but also whether he or she "understands" the task as well.

Understanding and doing is part of the dual purpose goal of technology being a learning tool and content to learn about (Lewis, 2007). In order to avoid making incorrect assumptions about Web 2.0 self-efficacy, seven specific Web 2.0 tools were analyzed for self-efficacy (blogs, wikis, social networking, video sharing, social tagging, social bookmarking, and social cataloging). To aid in the creation of this Web 2.0 survey instrument, pilot studies were conducted three times on just one tool (blogging). Each time the initial survey instrument was tested, questions were dropped or reworded to increase clarity, internal consistency, and content (face) validity based on input from participants, experts in the field, and statistical analysis. Statistical measures for reliability are charted through all three pilot studies in Table 1.5.

Table 1.5
Previous Pilot Study Reliability Statistics for Surveys on Blogging Self-Efficacy.

Term	N	n	I ¹	CA ¹	I ²	CA ²	Final SE Measurement
Fall 2005	191	105	22	0.74	16	0.78	2.94
Spring 2006	49	26	15	0.90	12	0.94	4.04
Fall 2006	81	35	15	0.93	15	0.932	2.63

**See Appendix B for surveys, I¹ initial item count, CA¹ initial Chronbach's alpha, I² subsequent item count, CA² subsequent Chronbach's alpha*

Existing Technology Usage Scale, Strengths and Weaknesses, and Modification of

In a previous study (Davis , Chapter 3), a Web 2.0 usage scale was created based on an existing Technology usage scale created by Jankowska (2004). The original survey instrument design by Jankowska included three main areas of usage discovery: what, how, and how often. Weaknesses for Jankowska's original design included no verifiable reliability data and some survey items were skewed because of confusion of wording. However, validity was strengthened for Jankowska's technology survey

instrument because of stratified random sampling and 12 interviews that helped shape the formation of the survey items, and the library science domain was a good match to carry over to this Web 2.0 study. Modification of the overall theme from technology usage to Web 2.0 usage helped tailor Jankowska's survey instrument toward this study's goal, as well as answering the three questions: what (seven Web 2.0 tools), how (for work/school, not for work/school), and finally how often (hours per week, frequency of contributions, etc.).

How Will Web 2.0 Self-Efficacy and Web 2.0 Usage be Regressed?

The purpose of Chapter 4 was to address the concerns listed above by answering the following question.

Research Question 3: Can self-efficacy toward Web 2.0 be used to predict Web 2.0 usage?

Method and Analyses

Participants

The intent of the research was to study Web 2.0 within the library science population. Since library science is such a broad area, the focus was narrowed to specifically concentrate on two of the main components of this area, graduate library school students (students) and academic librarians (librarians). It was felt that these two groups represented both the birth of library science (as noted in the students) and the practice of library science (as noted in the librarians). The researcher chose institutions whose graduate library school programs were American Library Association (ALA) Accredited, so that it could be assumed that if the graduate library schools had attained

ALA accreditation, the graduate library schools met certain core requirements. After discussing the topic of this research with several academic librarians and graduate library school students, it was determined that there was indeed a link between the graduate library school students and the academic libraries at the institutions. Since a link was established between the academic librarians and the graduate library school students, it was then determined that the focus for the research needed to be on academic librarians and graduate library school students at institutions where the graduate library school was ALA accredited.

There were varying opinions as to the exact definition of an academic librarian; therefore, in order to be as objective as possible when creating the respondent participation request list, a web crawling script was created to search the library sites at the institutions with ALA accredited library schools and grab all of the names and addresses and titles of individuals whose title included "librarian" in the title. Once the master list was created, the list was then culled to remove such occurrences as "assistant to the librarian" as listings such as this indicated a clerical staff person, not an academic librarian. Deciding who was a graduate library school Student presented less of a challenge, as graduate library school students are enrolled in classes and are identified as such by class roles of an instructor or faculty member.

Since all members of each group were given the opportunity to participate, there were generous data to interpret. Of 17,000 students possible, 7079 respondents took the survey, where 847 responses were not included because of incomplete data or the respondent did not take the entire survey. There were 6232 usable responses, which equates to about 37% of the total student population. Of 3,421 librarians possible, 2979

respondents took the survey, where 378 responses were not included because of incomplete data or the respondent did not take the entire survey. There were 2601 usable responses, which equates to about 76% of the librarian population. Demographic data are shown in 1.6.

Table 1.6
Demographic Information for the Combined Population

	Academic Librarians (n=2601)		Library Students (n=6232)		Total
	%	n	%	n	n
Identity Association					
Female	72.1	1875	88.6	5521	7396
Male	25.7	669	11.4	711	1380
Trans	2.2	57	0.0	0	57
Degrees Held					
Humanities	56.2	1461	56.0	3490	4951
Social Sciences	49.9	1298	39.2	2442	3740
Combined Degree	10.5	274	11.9	740	1014
Education	16.3	424	18.8	1174	1598
Highest Degree Attained					
Doctoral	5.0	131	2.0	124	255
Master's	77.9	2027	44.5	2772	4799
Undergraduate	15.3	398	47.0	2929	3327
Degree Not Listed	1.7	45	6.5	407	452
Ages					
	<u>Academic Librarians</u>		<u>Library Students</u>		
M	43.0		33.0		
SD	12.0		9.0		
Range	22-64		23-62		

Table 1.6
Demographic Information for the Combined Degree

Combined Degree Itemized	<u>Academic Librarians</u>		<u>Library Students</u>	
	%	<i>n</i>	%	<i>n</i>
Natural Sciences	6.7	175	6.7	420
Business	1.1	28	5.1	315
Engineering	0.4	11	0.1	5
Law	1	25	0.0	0
MD	1.3	35	0.0	0

Data Collection Procedures

A base survey was constructed with the general theme of a definition of Web 2.0. Then, that base survey was reworded and tailored to match librarians and students. The end result was that two separate surveys were constructed: one concentrating specifically on academic librarians and the other concentrating specifically on graduate library school students.

A master address list for the academic librarians was created by scanning the websites of the academic libraries at the institutions with ALA accredited graduate library schools (62 at the time of this study). The librarians were then contacted by the researcher via a bulk email for the initial request for participation in the study, and were provided a URL by which to take the anonymous online survey.

The researcher contacted the chair of each department/school for library and information studies via email for the initial request for participation in the study, and provided a URL by which to take the anonymous online survey. Then, the chair contacted each professor actively teaching classes during that semester and requested that the professor email his or her students the URL for the online survey. Participants were informed that by clicking “submit” on the online survey, they were consenting to and agreeing to participate in the study. Of a total 62 ALA accredited graduate library science programs, “confirmation for participation” response emails were received from 39 department heads.

Two Studies

Study 1: Reliability and Validity of the Web 2.0 self-efficacy scale.

Data Analysis Procedures

In order to test the survey’s reliability rating, the survey instrument’s Chronbach’s alpha was calculated. The survey responses were subjected to an exploratory factor analysis using a principal components analysis with a varimax, orthogonal rotation. Factor analysis is useful in providing validity evidence for the instrument. Factor analysis provides some of the tools needed to define the underlying dimensions of variables in construct validity. Content validity was supported by five independent subject matter experts in Library Studies, Educational Psychology, Instructional Technology, Higher Education, and Educational Research.

Study 2: Ability of the Web 2.0 Self-Efficacy Scale to Predict Web 2.0 Usage

Data Analysis Procedures

In order to determine if there was a correlation between self-efficacy and usage, a hierarchical linear regression was run with each Web 2.0 tool “hours per week” usage item as the dependent variable and the self-efficacy total for each Web 2.0 factor theme as the independent variable in model one. Model two included gender (male or female), highest degree (undergraduate or graduate), and classification (librarian or student). The items were paired; for example, Web 2.0 organizational self-efficacy items were paired with blogging usage items. The usage instrument was very detailed in that it queried the respondents’ usage at school and away from school. However, self-efficacy is tied to the person, not to the location. Therefore, the work/school “hours per week” usage and the non-school/non-work “hours per week” usage items were added together to give a sum total for usage per week for an individual. This resulted in 7 dependent variable items and 7 self-efficacy tool totals (independent variables) over two models, for a total of 49 dual model hierarchical linear regressions.

CHAPTER 2
EXAMINING THE PERCEPTIONS OF ACADEMIC LIBRARIANS AND
GRADUATE LIBRARY SCHOOL STUDENTS REGARDING THE DEFINITION OF
WEB 2.0

A quick survey of the history of curriculum pedagogy for graduate library school education reveals that as technology has changed, so has the library school curriculum in order to keep pace with the technological changes (Jones, ERIC Clearinghouse on Higher Education., Association for the Study of Higher Education., & George Washington University. Graduate School of Education and Human Development., 2002). However, unlike Moore's Law that states that microchip speed will double about every two years, information (content) and the tools available on the internet for utilizing information have increased exponentially over the years (Schaller, 1997). A challenge that librarians face is how to organize this information and how to help patrons understand how to find usable information on the internet (Ansari, 2007). A precursor chosen by most future librarians is the enrollment in graduate library school. It is in library school where future librarians are supposed to be educated on core pedagogy and also on cutting edge technology. One common problem shared between these two groups, the librarians and the future librarians, is that because of the rapid growth in the internet and more specifically Web 2.0, there is no real starting point for training and education of Web 2.0 (Fidishun, 2001).

On Web 2.0

According to Rimland (2007), in order to understand how relevant a topic is, one must examine the importance that topic plays compared to other items of impact. In the

academic library profession, some academic libraries are focused around other areas besides Web 2.0 tools and integration of these tools because of the nature of the libraries main services (e.g., historical artifact preservation, or digital archiving) (Harer & Cole, 2005). On the opposite end of the spectrum for academic libraries, there may be participation in such movements as “Slam the boards,” an initiative for librarians to participate in online answer boards such as Yahoo! Answers, Amazon’s Askville, The Wikipedia Reference Desk, and others (Blumenstein, 2007). There are some graduate library school syllabi that indicate that Web 2.0 is of lower importance than other areas of curriculum, and then there are even graduate library school programs that dedicate one or more courses on just the topic of Web 2.0 (Jaeger & Franklin, 2007). However, according to Markey (2004), there is still no unified direction or ranking illustrating the importance of Web 2.0 in academic libraries and Web 2.0 in graduate library school education. Subsequently, as mentioned earlier, and reiterated by Alexander (2006), Web 2.0 has no concrete or accepted single definition. Alexander goes on to state that even placing the increment “2.0” after the prefix “Web” infers that one must already understand what Web 1.0 was all about before one can understand what Web 2.0 is all about. Another issue regarding the definition of Web 2.0 is the fact that often times a sub-component of Web 2.0 is used in defining the actual root word, and when one does not understand the subcomponent, such as blogging, understanding the higher level word is even more difficult (Miller, 2005). One additional issue related to defining Web 2.0 is the position of Web 2.0’s successor, Web 3.0. Web 3.0, often referred to as the semantic web, is composed of a network of descriptors that help computers understand how to better search and retrieve information that users are looking for (Horrocks, 2008).

Purpose

Even with the many studies that have covered such specific tools of Web 2.0 as blogging or wikis or social networking sites like Myspace or Facebook (David & Martin, 2006), there still appears to be a gap in research on the definition of Web 2.0 as a whole. Of specific importance to the library science community, both in library science education and in the library science profession, is the ability to define technology, because only after understanding technology can the technology be used as a tool and information about the tool be organized and disseminated (Miller, 2005). Although there are several instruments available to extract from an individual his or her understanding of the definition of technology (Kraemer et al., 2007), or computing (Young, Herson, & Powell, 2006), to date there have not been documented methods for extracting from one understanding of the definition of Web 2.0 holistically. This study seeks to extract a Web 2.0 definition from academic librarians and graduate library school students at colleges and universities with ALA accredited graduate library schools, and determine if there are any differences between the two groups. The intent for gathering the definition of Web 2.0 from librarians and students is two-fold: to be more in line with Ralph and Olsen's (2007) view of successful learning technology and with Tileston's (2000) notion that content cannot be learned until it is properly defined.

Concerns With Current Technology Understanding Self-Assessment Measures

Kraemer et al. (2007) created a self-assessment for patrons' understanding of key concepts in library processes and technology. Although this self-assessment measure was adequate in achieving the goal of gauging how well patrons understood navigating the library's website and using other technology means to accomplish certain basic research

tasks in the library, this same self-assessment environment is not an exact mirror image of the environment for gathering an understanding of one's definition of Web 2.0. First and foremost, O'Reilly (2005) states that only a small percentage of people that claim to have heard of Web 2.0, could actually put that abstract concept into concrete terms. Secondly, Web 2.0 understanding hinges not on understanding one concept in a specific tool, it encompasses several concepts, processes, and ideas across a variety of tools (Mary, 2007). Furthermore, merely being surrounded by Web 2.0 is not enough to understand what exactly it is, one must be immersed in and an active participant of Web 2.0 to really understand its depth and breadth (Ankolekar et al., 2008).

This study was guided by the following research questions:

Research Question 1a: How do academic librarians and student librarians as a group define Web 2.0?

Research Question 1b: Are there differences between how academic librarians and graduate library school students define Web 2.0?

Method

Participants

The intent of the research was to study Web 2.0 within the library science population. Since library science is such a broad area, the focus was narrowed to specifically concentrate on two of the main components of this area, graduate library school students (students) and academic librarians (librarians). It was felt that these two groups represented both the birth of library science (as noted in the students) and the practice of library science (as noted in the librarians). The researcher chose institutions whose graduate library school programs were American Library Association (ALA)

Accredited, so that it could be assumed that if the graduate library schools had attained ALA accreditation, the graduate library schools met certain core requirements. After discussing the topic of this research with several academic librarians and graduate library school students, it was determined that there was indeed a link between the graduate library school students and the academic libraries at the institutions. Since a link was established between the academic librarians and the graduate library school students, it was then determined that the focus for the research needed to be on academic librarians and graduate library school students at institutions where the graduate library school was ALA accredited.

There were varying opinions as to the exact definition of an academic librarian; therefore, in order to be as objective as possible when creating the respondent participation request list, a web crawling script was created to search the library sites at the institutions with ALA accredited library schools and grab all of the names and addresses and titles of individuals whose title included "librarian" in the title. Once the master list was created, the list was then culled to remove such occurrences as "assistant to the librarian" as listings such as this indicated a clerical staff person, not an academic librarian. Deciding who was a graduate library school student presented less of a challenge, as graduate library school students are enrolled in classes and are identified as such by class roles of an instructor or faculty member.

Since all members of each group were given the opportunity to participate, there were generous data to interpret. Of 17,000 students possible, 7079 respondents took the survey, where 847 responses were not included because of incomplete data or the respondent did not take the entire survey. There were 6232 usable responses, which

equates to about 37% of the total student population. Of 3,421 librarians possible, 2979 respondents took the survey, where 378 responses were not included because of incomplete data or the respondent did not take the entire survey. There were 2601 usable responses, which equates to about 76% of the librarian population. Demographic data are shown in 2.1.

Table 2.1
Demographic Information for the Combined Population

	Academic Librarians (n=2601)		Library Students (n=6232)		Total
	%	n	%	n	n
Identity Association					
Female	72.1	1875	88.6	5521	7396
Male	25.7	669	11.4	711	1380
Trans	2.2	57	0.0	0	57
Degrees Held					
Humanities	56.2	1461	56.0	3490	4951
Social Sciences	49.9	1298	39.2	2442	3740
Combined Degree	10.5	274	11.9	740	1014
Education	16.3	424	18.8	1174	1598
Highest Degree Attained					
Doctoral	5.0	131	2.0	124	255
Master's	77.9	2027	44.5	2772	4799
Undergraduate	15.3	398	47.0	2929	3327
Degree Not Listed	1.7	45	6.5	407	452
Ages					
	<u>Academic Librarians</u>		<u>Library Students</u>		
M	43.0		33.0		
SD	12.0		9.0		
Range	22-64		23-62		

Table 2.1
Demographic Information for the Combined Population

Combined Degree Itemized	Academic Librarians		Library Students	
	%	<i>n</i>	%	<i>n</i>
Natural Sciences	6.7	175	6.7	420
Business	1.1	28	5.1	315
Engineering	0.4	11	0.1	5
Law	1	25	0.0	0
MD	1.3	35	0.0	0

Materials

Based on this preliminary literature review on the existing definition of Web 2.0 and the obvious unanswered question of “just what is Web 2.0?” more data needed to be gathered on the definition of Web 2.0. In order to gather these data, a Web 2.0 survey instrument was constructed based on previous research from Kraemer et al. (2007). Kraemer et al. (2007) developed a survey instrument to extract what respondents understood in regard to a library website, based on a choice of up to five key areas of understanding. Respondents in Kraemer et al.’s study could choose as many or as few of the key areas as they felt necessary. Kraemer et al.’s instrument is constructed with several key areas of interest on the library website such as a library virtual tour, top ten facts, voyager basics, and many others. Within each section, a self-assessment question was asked with Likert responses ranging from: “I need a lot of help getting started,” all the way to: “I am thoroughly able to research in the library.” The goal of the instrument

was not to gauge user confidence or satisfaction, but rather to gauge whether the technology training was adequate to help patrons gain an understanding of the library website.

Weaknesses and Strengths of Existing Technology Self-Assessment Scale

Weaknesses

Kraemer et al.'s (2007) survey instrument was designed around self-assessment of online learning technology. For example, an original item might have stated "Please finish the following statement: "When I think of my understanding with voyager... A.) I need a lot of help getting started, B.) I need some help getting started, C.) I am somewhat able to do research in the library, D.) I am thoroughly able to do research in the library."

One primary flaw with Kraemer et al.'s self-assessment is the semantic structure of the instrument items. According to Davis, Wilson, and Horn (2005), it is less effective to pair broad statements with broad supplemental choices, for what you end up with is broad, blanket response sets, which are not very useful in statistical research. Davis et al.'s mal-appropriate generalization effect may be what contributed to the large increase in self-assessed knowledge perception from pre-test to post-test during the study.

Additionally, in Kraemer et al.'s study, the statistical reliability and validity were not discussed. The researchers considered these survey items to be qualitative information instead of using them as quantitative data, since these items depicted understanding instead of the more finite and quantitative items on the formal examination test included in the overall instrument.

Strengths

One of the main benefits of Kraemer et al.'s (2007) survey instrument items on self-assessment is the fact that self-assessment is a starting point for the definition items for Web 2.0. Secondly, Kraemer et al. do provide some statistical evidence that these self-assessment questions are sound enough in wording that they do illustrate a difference in response from pre-test to post-test. In cases where the items have been worded too poorly, no matter what the reality is of pre-test to post-test understanding, the respondents would not have been able to differentiate between responses, so the response set would have typically stayed the same from pre-test to post-test (Hildreth, 2007). Finally, Kraemer et al.'s survey items are helpful because each is poised in a library setting. When constructing survey instruments it is important to try to start with a working model that is centered in the domain in which one is studying (Davis et al., 2005).

Modifying the Technology Self-Assessment Scale

Modification of items from Kraemer et al.'s (2007) instrument has adapted the focus from general library technology to the focus of Web 2.0. By creating several possible definition choices for Web 2.0 and asking the respondent to rank his or her agreement with these statements, both qualitative information (definition of Web 2.0), and quantitative information (self-assessed agreement with the definition statements) can be gathered at the same time. Combining qualitative and quantitative response sets has been shown to increase statistical significance (Franklin & Plum, 2006). To establish a starting point for the semantics of the definition survey instrument, a pilot study was conducted with graduate library school students to determine what was considered to be

reasonable choices for the response of: “how do you define Web 2.0?”. Results for this pilot study are included in Table 2.2.

Table 2.2
Pilot Study Results for Definition of Web 2.0

Definition	n	%
Read/Write web	12	18.8
The Net Is The Computer	1	1.6
Tools On The Web	8	12.5
A Passing Fad	1	1.6
The Interactive Web	3	4.7
Social Networking	9	14.1
Information Sharing	7	10.9
Web as a Full-Fledged Computing Platform	9	14.1
User Centered Web	10	15.6
The People's Web	1	1.6
Database Driven Web	1	1.6
The New Web	2	3.1
Total	64	

Based on the results of the pilot study, the revised item used in this Web 2.0 study as revised to state, “Please rate below the degree to which you agree or disagree with each of the following statements: A.) Web 2.0 can be defined as the read/write web, B.) Web 2.0 can be defined as social networking, C.) Web 2.0 can be defined as information sharing, D.) Web 2.0 can be defined as using the web as a full-fledged computing platform, E.) Web 2.0 can be defined as the user-centered web, F.) Web 2.0 can be defined as tools on the web, G.) Web 2.0 can be defined as _____ (write your own).” Next to each statement of what Web 2.0 is defined as is a Likert scale from strongly disagree to strongly agree. (See Appendix A)

Procedure

One base survey was constructed with the general theme of definition of Web 2.0. Then, that base survey was reworded and tailored to match librarians and the students.

The end result was that two separate surveys were constructed: one concentrating specifically on academic librarians and the other concentrating specifically on graduate library school students.

A master address list for the academic librarians was created by scanning the websites of the academic libraries at the institutions with ALA accredited graduate library schools. The librarians were then contacted by the researcher via a bulk email for the initial request for participation in the study, and were provided a URL by which to take the anonymous online survey.

The researcher contacted the chair of each department/school for library and information studies via email for the initial request for participation in the study, and provided a URL by which to take the anonymous online survey. Then, the chair was asked to contact each professor actively teaching classes during that semester and asked that each professor email his or her students the URL for the online survey. Participants were informed that by clicking “submit” on the online survey, they were consenting to and agreeing to participate in the study.

Analyses

Respondents were asked to rate the level of agreement (1 - strongly disagree to 5 - strongly agree) with six phrases that completed the statement, “I define Web 2.0 as...,” The six phrases were, “Read/Write Web”, “ Social Networking”, “Information Sharing”, “Full-Fledged Computing Platform”, “User-Centered Web”, and “Tools on the Web.” To determine the overall perception of the definition of Web 2.0 and address Research Question 1a, frequencies were run to illustrate mean agreement with the six Web 2.0 definitions. For the overall grand mean agreement toward definition of Web 2.0, it

appeared as though the highest mean agreement was towards the term “Information Sharing.” Three of the grand means were at the midpoint of agreement: “Read/Write Web”, “Full-Fledged Computing Platform”, and “Tools on the Web” (3, or “neither disagree nor agree”), and three were past the midpoint: “Social Networking”, “Information Sharing”, and “User-Centered Web” (4, or “agree”). Overall, Librarians issued the highest mean agreement of definition of Web 2.0 to the phrase “User-Centered Web.” Librarians placed four of the phrases for definition of Web 2.0 at the midpoint of agreement: “Read/Write Web”, “Information Sharing”, “Full-Fledged Computing Platform”, and “Tools on the Web” (3, or “neither disagree nor agree”), and two of the phrases were above the midpoint: “Social Networking” and “User-Centered Web” (4, or “agree”). Students overall placed the phrase “Information Sharing” as the highest mean agreement toward definition of Web 2.0. Students overall placed four of the phrases for definition of Web 2.0 at the midpoint of agreement: “Read/Write Web”, “Social Networking”, “Full-Fledged Computing Platform”, “User-Centered Web”, and “Tools on the Web” (3, or “neither disagree nor agree”), and two of the phrases were above the midpoint: “Information Sharing” and “User-Centered Web” (4, or “agree”). The results are displayed in Table 2.3.

Table 2.3
Overall Perceptions for Definition of Web 2.0

	Students (n=6232)			Librarians (n=2601)			Overall (n=8833)		
	n	M	SD	n	M	SD	n	M	SD
Read/Write Web	6232	3.63	0.88	2601	3.60	0.84	8833	3.62	0.87
Social Networking	6232	3.98	0.83	2601	4.04	0.71	8833	4.00	0.80
Information Sharing	6232	4.13	0.93	2601	3.89	1.15	8833	4.06	1.00
Full-Fledged Computing Platform	6232	3.40	0.84	2601	3.26	1.04	8833	3.36	0.91
User-Centered Web	6232	4.01	1.19	2601	4.08	0.98	8833	4.03	1.13
Tools on the Web	6232	3.70	1.08	2601	3.71	0.84	8833	3.70	1.02

In order to determine more detailed and robust comparisons between librarians and students with regard to agreement of definition of Web 2.0, a multivariate analysis of variance was run in SPSS with the dependent variables of Web 2.0 definition (“Read/Write Web”, “Social Networking”, “Information Sharing”, “Full-Fledged Computing Platform”, “User-Centered Web”, and “Tools on the Web”) and the independent variables of Gender (male or female), Classification (Librarian or Student), and Highest Degree (Undergraduate or Masters). The original demographics did have a category of gender “Trans.” After examining the data in total, it was determined that the Trans group represented less than one half of one percent of the total sample. Therefore,

Gender was limited to male or female. There were several options for indicating highest degree (“High School”, “Associates”, “Undergraduate”, “Masters”, “Doctoral”), however, there were no “High School” or “Associates” respondents, and it was determined that the “Doctoral” group, could be folded in with “Masters” respondents. In order to control for Type 1 error and to create a more stringent p value, the standard p value of .01 was divided by 10 (number of tests run in MANOVA) to arrive at the new p value of .001. All significance was gauged against the .001 p value, which is also the most stringent p value that SPSS can report.

When examining the between group effects from the MANOVA none of the independent variables showed significance and no significance was found in any of the interactions in the between group effects. Between group effects are listed in Table 2.4.

Table 2.4
MANOVA Between-Group Effects for Definition of Web 2.0

<i>Source</i>	df	Roy's θ	F
Gender	14.00	0.01	0.81
Classification	14.00	0.01	2.45
Highest Degree	14.00	0.01	1.17
Gender X Classification	14.00	0.00	2.50
Gender X Highest Degree	14.00	0.01	2.02
Classification X Highest Degree	14.00	0.01	1.15
Gender X Classification X Highest Degree	14.00	0.01	1.39
error	7815		

*All F statistics are exact. Roy's θ measures the strength of the effect, and it equals η^2 . * p , <.001.*

A test of between-subjects effects revealed that the overall Web 2.0 definition items do show significance, “Read/Write Web”, $F(7,0.05) = 64.57, p < .001$; “Social

Networking”, $F(7,.03) = 31.01, p < .001$; “Information Sharing”, $F(7,0.02) = 17.00, p < .001$; “Full-Fledged Computing Platform”, $F(7,0.04) = 50.40, p < .001$; “User-Centered Web”, $F(7,0.02) = 24.31, p < .001$; and “Tools on the Web”, $F(7,0.11) = 148.04, p < .001$. No significance was found in any of the interactions for the between-subject effects.

Between-subject effects are listed in Table 2.5.

Table 2.5
MANOVA Between-Subject Effects for Definition of Web 2.0

Source	Dependent Variable	df	F	η^2
Corrected Model	Read/Write Web*	7	64.57	0.05
	Social Networking*	7	31.01	0.03
	Information Sharing*	7	16.99	0.01
	Full-Fledged Computing Platform*	7	50.36	0.04
	User-Centered Web*	7	24.31	0.02
	Tools on the Web*	7	148.04	0.11
Gender	Read/Write Web	1	1.70	0.00
	Social Networking	1	0.29	0.00
	Information Sharing	1	0.40	0.00
	Full-Fledged Computing Platform	1	0.04	0.00
	User-Centered Web	1	0.45	0.00
	Tools on the Web	1	0.50	0.00

Table 2.5
MANOVA Between-Subject Effects for Definition of Web 2.0

Source	Dependent Variable	df	F	η^2
Classification	Read/Write Web	1	0.02	0.00
	Social Networking	1	0.01	0.00
	Information Sharing	1	1.28	0.00
	Full-Fledged Computing Platform	1	11.29	0.00
	User-Centered Web	1	0.00	0.00
	Tools on the Web	1	1.81	0.00
Highest Degree	Read/Write Web	1	2.05	0.00
	Social Networking	1	0.06	0.00
	Information Sharing	1	0.30	0.00
	Full-Fledged Computing Platform	1	3.48	0.00
	User-Centered Web	1	0.31	0.00
	Tools on the Web	1	1.05	0.00

Table 2.5 (Continued)
MANOVA Between-Subject Effects for Definition of Web 2.0

Source	Dependent Variable	df	F	η^2
Gender X Classification	Read/Write Web	1	0.84	0.00
	Social Networking	1	0.38	0.00
	Information Sharing	1	0.00	0.00
	Full-Fledged Computing Platform	1	10.24	0.00
	User-Centered Web	1	0.01	0.00
	Tools on the Web	1	4.34	0.00
Gender X Highest Degree	Read/Write Web	1	1.62	0.00
	Social Networking	1	0.39	0.00
	Information Sharing	1	0.14	0.00
	Full-Fledged Computing Platform	1	7.29	0.00
	User-Centered Web	1	0.23	0.00
	Tools on the Web	1	0.01	0.00

Table 2.5 (Continued)
MANOVA Between-Subject Effects for Definition of Web 2.0

Source	Dependent Variable	df	F	η^2
Classification X Highest Degree	Read/Write Web	1	3.60	0.00
	Social Networking	1	0.18	0.00
	Information Sharing	1	0.45	0.00
	Full-Fledged Computing Platform	1	1.32	0.00
	User-Centered Web	1	0.04	0.00
	Tools on the Web	1	0.33	0.00
Gender X Classification X Highest Degree	Read/Write Web	1	0.32	0.00
	Social Networking	1	0.05	0.00
	Information Sharing	1	0.07	0.00
	Full-Fledged Computing Platform	1	2.38	0.00
	User-Centered Web	1	0.40	0.00
	Tools on the Web	1	2.27	0.00

Table 2.5 (Continued)
MANOVA Between-Subject Effects for Definition of Web 2.0

Source	Dependent Variable	df	F	η^2
Error	Read/Write Web	8061		
	Social Networking	8061		
	Information Sharing	8061		
	Full-Fledged Computing Platform	8061		
	User-Centered Web	8061		
	Tools on the Web	8061		

**p < .001*

Discussion

When examining the overall means for agreement of definition of Web 2.0 within the combined population, it is clear “Information Sharing“, “User-centered Web”, and “Social Networking” have the highest agreement (mean \geq 4.0). The definitions for Web 2.0 of: “Tools on the Web”, “Read/Write Web”, and “Full-Fledged-computing Platform” had a mean agreement range of 3.36-3.70. Even though these fall on the midpoint choice of “neither disagree nor agree”, “”, “Read/Write Web”, and “Tools on the Web” do fall in the top half of the “neither,” which could suggest that almost all of the items had

agreement by the entire combined population of academic librarians and graduate library school students. Having agreement on five of the six definition items provides a two-fold conundrum. Although it is nice to know that the combined population agreed with almost all of the definition items, it is concerning at the same time, because it also denotes that the population as whole does not have a clear, single definition for Web 2.0.

Although adding a free text field for respondents to write in a Web 2.0 definition not listed provides more qualitative data, these data were not analyzed in this study because the quantity was only equal to .41% (n=37) of the entire mass of respondents. (See Appendix C)

As for comparing librarians' and students' agreement on Web 2.0 definitions within each of the dependent variables and within the interactions of the dependent variables, no significance was reported. One possible rationale for there not being a significant difference could be that the interaction of the demographics with the definition agreement responses creates subgroups that tend to agree more on Web 2.0 definition, than does the group at large.

What was hoped to be gained from this research was a clear position towards one common definition of Web 2.0. However, the results from the research tend to suggest that the notion of pinpointing one specific definition of Web 2.0 is challenging at this time. One possible reason for this "fuzzy" or unclear definition of Web 2.0 could be that the phrases provided for definition of Web 2.0 are too close in terminology for one to differentiate between them. Future research in the area of Web 2.0 definition among the library science arena would benefit by continually re-evaluating the themes of definition of Web 2.0. One such way to achieve that continual evaluation would be to take the

“write-in” definitions provided by some respondents in this study (Included in Appendix C), and use them to guide a new instrument for gauging Web 2.0 definition agreement. Also, as noted by Horrocks (2008), Web 2.0 could be building the foundation for the semantic web, also known as Web 3.0. It could be that Web 2.0 is such a fleeting flash that determining the definition for Web 2.0 is overshadowed by the emergence of Web 3.0. Regardless, not knowing how to define Web 2.0 will continue to present a challenge both to practicing librarians and to students learning to be librarians. However, that may be a challenge that the library science community is willing to embrace.

REFERENCES

- Alexander, B. (2006). Web 2.0: A new wave of innovation for teaching and learning? *E-Learning*, 41(2), 32.
- Ankolekar, A., Krötzsch, M., Tran, T., & Vrandečić, D. (2008). The two cultures: Mashing up Web 2.0 and the Semantic Web. *Web Semantics: Science, Services and Agents on the World Wide Web*, 6(1), 70-75.
- Ansari, M. N. (2007). Librarian as Cybrarian, *Pakistan Library & Information Science Journal* v. 38 no. 2 (June 2007) p. 24-31.
- Blumenstein, L. (2007). On September 10, Librarians Will Be a Presence on Answer Sites. *Library Journal*.
- David, E. M., & Martin, R. (2006). Web 2.0: hypertext by any other name?, *Proceedings of the seventeenth conference on Hypertext and hypermedia*. Odense, Denmark: ACM.
- Davis, M., Wilson, C. S., & Horn, A. (2005). Informing Decision-Making in Libraries: Informetric Research as Input to LIS Education and Practice. *Australian Academic & Research Libraries*, 36(4), 195-213.
- Fidishun, D. (2001). People servers vs. information providers: the impact of service orientation on technology training. *Information Technology and Libraries*, 20(1), 29-33.
- Franklin, B., & Plum, T. (2006). Successful Web Survey Methodologies for Measuring the Impact of Networked Electronic Services (MINES for Libraries). *IFLA Journal*, 32(1), 28-40.
- Harer, J. B., & Cole, B. R. (2005). The Importance of the Stakeholder in Performance Measurement: Critical Processes and Performance Measures for Assessing and Improving Academic Library Services and Programs. *College & Research Libraries*, 66(2), 149-170.
- Hildreth, S. (2007). Engaging Your Community: A Strategy for Relevance in the Twenty-First Century. *Public Libraries*, 46(3), 7-9.
- Horrocks, I. A. N. (2008). Ontologies and the Semantic Web. *Communications of the ACM*, 51(12), 58-67.
- Jaeger, P. T., & Franklin, R. E. (2007). The Virtuous Circle: Increasing Diversity in LIS Faculties to Create More Inclusive Library Services and Outreach. *Education Libraries*, 30(1), 20-26.
- Jones, E. A., ERIC Clearinghouse on Higher Education., Association for the Study of Higher Education., & George Washington University. Graduate School of Education and Human Development. (2002). *Transforming the curriculum : preparing students for a changing world*. San Francisco, CA: Jossey-Bass.
- Kraemer, E. W., Lombardo, S. V., & Lepkowski, F. J. (2007). The Librarian, the Machine, or a Little of Both: A Comparative Study of Three Information Literacy Pedagogies at Oakland University, *College & Research Libraries* v. 68 no. 4 (July 2007) p. 330-42.
- Markey, K. (2004). Current Educational Trends in the Information and Library Science Curriculum. *Journal of Education for Library and Information Science*, 45(4), 317-339.

- Mary, Z. (2007). Web 2.0: hype or happiness?, *Proceedings of the 2007 international cross-disciplinary conference on Web accessibility (W4A)*. Banff, Canada: ACM.
- Miller, P. (2005). Web 2.0: Building the New Library, *Ariadne* (October ed.).
- O'Reilly, T. (2005). What Is Web 2.0, Design Patterns and Business Models for the Next Generation of Software. September 30. from <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>
- Ralph, J., & Olsen, S. (2007). Podcasting as an Educational Building Block in Academic Libraries. *Australian Academic & Research Libraries*, 38(4), 270-279.
- Rimland, E. (2007). Ranganathan's Relevant Rules. *Reference & User Services Quarterly*, 46(4), 24-26.
- Schaller, R. R. (1997). Moore's law: past, present and future. *Spectrum, IEEE*, 34(6), 52-59.
- Tileston, D. W. (2000). *10 best teaching practices : how brain research, learning styles, and standards define teaching competencies*. Thousand Oaks, Calif.: Corwin Press.
- Young, A. P., Herson, P., & Powell, R. R. (2006). Attributes of Academic Library Leadership: An Exploratory Study of Some Gen-Xers. *The Journal of Academic Librarianship*, 32(5), 489-502.

CHAPTER 3

WEB 2.0 USAGE BY ACADEMIC LIBRARIANS AND LIBRARY SCHOOL STUDENTS IN UNIVERSITIES WITH ALA ACCREDITED LIBRARY SCHOOLS

Although core principles and theories behind librarianship seldom change, technology in and around libraries is constantly changing. One of the changes in these technologies is the use of Web 2.0, which has been difficult to define. Although there are many definitions and variations for “Web 2.0,” Web 2.0 is basically the idea of taking normal World Wide Web functions and making them more functional and interactive. However, even with the difficulty of defining Web 2.0, librarians will be expected to be aware of it and competent to assist library students and patrons in its use. Additionally, according to Stoffle and Leeder (2005), what forms practice and procedure for academic librarians equates to content (curriculum) and learning technology (tools to help learn) for library school students. By exploring this relationship between Web 2.0 and library science, new concepts, descriptions and classifications may emerge. Obtaining information on usage helps not only in understanding but also in the steps towards seeing role and importance (Lim, 2007).

On Web 2.0

Statistics for the use of MySpace, Facebook, etc. show that web surfers of today are using these social networking sites in large numbers and that usage is growing year by year (Bausch & Han, 2006). When students who will be using libraries are using these tools on a daily basis, they are going to expect the same from libraries. As users become

accustomed to using services that apply Web 2.0 concepts, they will expect the same types of functionality in library services.

Research from Huffman (2006) suggests that there is no standardized trend that supports that Web 2.0 is *the* most important aspect of the academic librarians' weekly workflow. There are several possible reasons for this. One primary possibility is the assumption that not all academic libraries are in the same functional domain (Maness, 2006). According to Schwartz (2007), academic libraries vary greatly from one to the other in size, funding, scope, purpose, audience, and technology. While some academic libraries may be able to focus on cutting edge technology and build staff around that drive, other academic libraries may not have quite as much support to push forth new technology and staff for such purposes. Even still, some academic libraries may be focused specifically in a certain direction, not opposing new technology ideas on purpose, but merely dedicated to pre-existing goals such as historical artifact preservation or even digital archiving (Harboe-Ree, 2007). Nonetheless, academic libraries such as those at the University of Houston have realized the potential of Web 2.0 and have incorporated many features of Web 2.0 into the libraries' websites (Coombs, 2007). In addition to librarian use of Web 2.0 technologies, patrons are coming in with a need for Web 2.0 technologies. Fidishun (2001) writes that there is an increasing number of patrons of varying demographics who seek to write a blog, search for a blog, or do what is commonly called "aggregate" blogs (a process of putting blogs you like to read in an electronic "basket" so that you can keep an eye on them without having to keep checking each blog individually). Still other research by Cohen (2004) indicates that patrons are wanting to use more than blogs, as patrons see wikis, podcasts, social bookmarking,

social tagging, and social cataloging as useful. Web 2.0 is not only important to the patrons that come into the brick and mortar academic libraries, but there has been enough interest in the virtual world of Facebook that LibGuides, a Web 2.0 service, has “sprung up” to help link Facebook users to academic and public libraries as well (Gerry, 2007). A final note indicating the importance of Web 2.0 in academic libraries is the fact that institutions that once would block such activities on a campus network like instant messaging or chat, are now finding ways to open the network back up for those activities, indicating not just a popularity of the services, but an educational role for the activities as well (Abram, 2007). Web 2.0, although novel at the time of this study, is making way for its successor, Web 3.0. Web 3.0 was still in the theoretical stage at the time this study was written, however, Horrocks (2008), states that Web 2.0 may actually be contributing and helping build the infrastructure for Web 3.0. According to Horrocks, Web 3.0 is also known as the semantic web, which means that Web 3.0 will use a network of descriptors of information that will help computers understand how to search and gather information and better serve the needs of users.

Purpose

There is an increasing number of articles being published about Web 2.0 application in libraries and library schools (Miller, 2005). However, without a way to synthesize these accounts into a comprehensive report, these studies remain isolated and not of much use to future researchers, practitioners and educators in the library science field. If an effort is not made to consolidate Web 2.0 usage into a holistic view, then Web 2.0 could continue to be a fragmented, confusing, and slowly adopted technology both for learning about and aiding the learning process.

Although there are several instruments available to extract from an individual his or her usage of technology, to date there have not been documented methods for extracting usage of Web 2.0 holistically. This study seeks to extract Web 2.0 usage from academic librarians and graduate library school students at colleges and universities with ALA accredited graduate library schools, and understand if there are any differences between the two groups. The intent for gathering usage of Web 2.0 from librarians and students is two-fold: to allow this research to be more in line with Ralph and Olsen's (2007) view of successful learning technology and with McKinney's (2006) notion that information and ideas that are widely used are worthy of being part of library science curriculum (2006).

Concerns With Current Technology Usage Scale

As stated earlier, Jankowska's (2004) technology usage scale extracted from participants three key areas of usage: what, how, and how often technology was used. Even though the reliability is unstated for Jankowska's usage instrument, the use of a stratified random sample and pre-testing with 12 interviews increased validity, plus Jankowska's audience was primarily targeted around library science, making the migration from technology usage to Web 2.0 usage manageable. The main modification to Jankowska's original technology usage instrument was a change in semantics from technology usage to Web 2.0 usage. Another major change that benefited this Web 2.0 usage study, was establishing 4 main groupings: librarians using Web 2.0 at work, librarians using Web 2.0 outside of work, students using Web 2.0 in class, and students using Web 2.0 outside of class. The reason that querying work/class/non-work/non-class usage locations is approached is because unlike traditional technology, Web 2.0 can be

used anywhere one has internet access, leading researchers to the question of, “where do users use Web 2.0?”.

When modifying the original technology usage instrument to tailor for Web 2.0 usage, an original item that might have been stated as: “I use the following technologies,” is now rephrased for this Web 2.0 study as: “I use the following Web 2.0 technologies.” When constructing the survey instrument on Web 2.0 usage, several factors were taken into consideration. Two separate surveys were constructed: one set in the theme of academic librarianship and the other in the theme of graduate library education.

However, both groups received the same basic type and structure of questions. As often as applicable throughout the Web 2.0 usage survey is the theme of “where do you...?” and the two areas queried in the survey instrument were “work” and “non-work” for the librarians, and “class” and “non-class” for the students. The survey is divided into two main sections, the first section asking overview questions (such as: “Please rank the following Web 2.0 tools with regard to your own use and overall use by others” and “do you...for work/class?” and “do you...not for work/class?”) and the second section asking very detailed questions on each of seven Web 2.0 tools chosen for this study (such as “About how much time each week (in hours) do you spend writing blogs?” and “Which blogging applications do you use at work/class?”). In order to gain an understanding of which Web 2.0 tools to concentrate on for this Web 2.0 study, a survey was conducted repeatedly over four semesters at a graduate library school at the beginning of the semester to newly enrolled graduate library school students. The library school students were asked to respond as to what they considered to be the seven most popular Web 2.0 tools in circulation. Results on frequencies for this pilot study are included in Table 3.1,

however, in summary, the seven most popular Web 2.0 tools at the time of the study were: blogs, wikis, social networking, video sharing, social tagging, social bookmarking, and social cataloging.

Table 3.1
Most Popular Web 2.0 Pilot Study Results

Web 2.0 Tool	n	%
Blogging	11	17.2
Video Sharing	8	12.5
Wikis	8	12.5
Social Bookmarking	8	12.5
Social Cataloging	7	10.9
Social Networking	7	10.9
Social Tagging	7	10.9
Communication Tools	2	3.1
Music Sharing	2	3.1
Photo Sharing	2	3.1
Document Sharing	1	1.6
Online Productivity	1	1.6
Total	64	

Within the seven tools analyzed, usage was distinguished by: quantity of time, frequency of individual contributions, quantity of variety of accounts, experience in years, and frequency at which one checks for updates. Supplemental characteristics for usage per tool were included to query: “have you heard of ...?”, and “do you participate at work/class/non-work/non-class?”. A logic schematic is included in Figure 3.1 to further clarify how all of the components of the survey are logically linked together.

Expanded Usage Research Model

Students (Descriptives) Have you heard of Rank usage for self /for others		Librarians (Descriptives) Have you heard of Rank usage for self /for others	
Class	Non-class	Work	Non-work
Which of these	Which of these	Which of these	Which of these
Do you: yes,no,don't know	Do you: yes,no,don't know	Do you: yes,no,don't know	Do you: yes,no,don't know
(Quantity)		(Quantity)	
How many hours per week do you	How many hours per week do you	How many hours per week do you	How many hours per week do you
How many different do you have	How many different do you have	How many different do you have	How many different do you have
How often do you submit	How often do you submit	How often do you submit	How often do you submit
How many years	How many years	How many years	How many years
How many times per day do you check	How many times per day do you check	How many times per day do you check	How many times per day do you check

Figure 3.1 Expanded Usage Research Model

This study was guided by the following research questions:

Research Question 2a: What are academic librarians' and students' usage of Web 2.0?

Research Question 2b: Are there differences in student and librarian usage?

The Web 2.0 usage instrument did not provide scale data, therefore Cronbach's alpha reliability could not be measured. Face Validity was provided by subject matter experts in the fields of Educational Psychology, Library Science, and Instructional Technology.

Method

Participants

The intent of the research was to study Web 2.0 and its interaction with the library science population. Since library science is such a broad area, the focus was narrowed down to specifically concentrate on two of the main components of this area, graduate library school students, and academic librarians. It was felt that these two groups represented both the birth of library science (as noted in the students) and the practice of library science (as noted in the librarians). The researcher chose institutions whose graduate library school programs were American Library Association (ALA) Accredited, so that it could be assumed that if the graduate library schools had attained ALA accreditation, the graduate library schools met certain core requirements. After discussing the topic of this research with several academic librarians and graduate library school students, it was determined that there was indeed a link between the graduate library school students and the academic libraries at the institutions. Since a link was established between the academic librarians and the graduate library school students, it was then determined that the focus for the research needed to be on academic librarians and graduate library school students at institutions where the graduate library school was ALA accredited.

There were varying opinions as to exactly what an academic librarian was defined as, therefore, in order to be as objective as possible when creating the respondent participation request list, a web crawling script was created to search the library sites at the institutions with ALA accredited library schools and grab all of the names and

addresses and titles of individuals whose title included "librarian" in the title. Once the master list was created, the list was then culled to remove such occurrences as "assistant to the librarian" as listings such as this indicated a clerical staff, not an academic librarian. Deciding who was a graduate library school Student presented less of a challenge, as graduate library school students are enrolled in classes and are identified as such by class roles of an instructor or faculty member.

Since all members of each group were given the opportunity to participate, there were generous data to interpret. Of 17,000 students possible, there were 6232 usable responses, which equates to about 37% of the total student population. There were a total of 7079 respondents who took the survey, where 847 responses were not included because of incomplete data or the respondent did not take the entire survey. The ALA graduate library schools totaled 62 at the time of this study, and confirmation to participate in the study was received from 39.

Of 3,421 librarians possible, there were 2601 usable responses, which equates to about 76% of the librarian population. There were a total of 2979 respondents who took the survey, where 378 responses were not included because of incomplete data or the respondent did not take the entire survey. Due to anonymity of responses, it was not possible to determine which academic libraries participated. Demographic data are shown in Table 3.2.

Table 3.2
Demographic Information for the Combined Population

	Academic Librarians (n=2601)		Library Students (n=6232)		Total
	%	n	%	n	n
Identity Association					
Female	72.1	1875	88.6	5521	7396
Male	25.7	669	11.4	711	1380
Trans	2.2	57	0.0	0	57
Degrees Held					
Humanities	56.2	1461	56.0	3490	4951
Social Sciences	49.9	1298	39.2	2442	3740
Combined Degree	10.5	274	11.9	740	1014
Education	16.3	424	18.8	1174	1598
Highest Degree Attained					
Doctoral	5.0	131	2.0	124	255
Master's	77.9	2027	44.5	2772	4799
Undergraduate	15.3	398	47.0	2929	3327
Degree Not Listed	1.7	45	6.5	407	452
Ages					
	<u>Academic Librarians</u>		<u>Library Students</u>		
M	43.0		33.0		
SD	12.0		9.0		
Range	22-64		23-62		
Combined Degree Itemized					
	<u>Academic Librarians</u>		<u>Library Students</u>		
	%	n	%	n	
Natural Sciences	6.7	175	6.7	420	
Business	1.1	28	5.1	315	
Engineering	0.4	11	0.1	5	
Law	1	25	0.0	0	
MD	1.3	35	0.0	0	

Materials

The scope of this study was to determine usage of Web 2.0 within Library Science. Of the more than 100 items in the researcher created Web 2.0 usage instrument, one theme of items seemed to elucidate the core scope of the study, and that theme was found in “Quantity of time spent contributing to Web 2.0 tools per week for work/school or non-work/non-school.” Therefore, only the quantity of time spent contributing to Web 2.0 items will be used in this study.

Procedure

One base survey was constructed with the general theme of usage of Web 2.0. Then, that base survey was reworded and tailored to match librarians and the students. The end result was that two separate surveys were constructed: one concentrating specifically on academic librarians and the other concentrating specifically on graduate library school students.

A master address list for the academic librarians was created by scanning the websites of the academic libraries at the institutions with ALA accredited graduate library schools. The librarians were then contacted by the researcher via a bulk email for the initial request for participation in the study, and were provided a URL by which to take the anonymous online survey.

The researcher contacted the chair of each department/school for library and information studies via email (Sample email found in Appendix D) for the initial request for participation in the study, and provided a URL by which to take the anonymous online survey. Then, the chair was asked to contact each professor actively teaching

classes during that semester and asked that each professor email his or her students the URL for the online survey. Participants were informed that by clicking “submit” on the online survey, they were consenting to and agreeing to participate in the study.

Analyses

Web 2.0 Usage Instrument Development

Although the entire Web 2.0 Usage instrument is composed of over 100 items, none of the items are true Likert-type and therefore cannot be tested for validity and reliability. Subject matter experts were consulted to provide face validity for the instrument.

Analyses

As stated previously, the usage survey had many items to choose from, so the researcher examined all of the data from the items and determined that the best gauge of Web 2.0 usage would be to use the item that measured the amount of time each week a respondent contributed to a Web 2.0 tool. Descriptive statistics were run with SPSS to generate the *n*, means, and standard deviations for the librarians, students, and the overall/combined sample to evaluate research question 2a. When examining the grand means for each item, the item with the highest mean time spent contributing per week was “Social Networking non-work/non-school” ($Mean=0.99, SD=1.15$). There appeared to be five Web 2.0 tools that had more time spent contributing per week for non-work/non-school than for work/school: Blogs ($Mean=0.52, SD=0.97$), Social Networking ($Mean=0.99, SD=1.15$), Social Tagging ($Mean=0.13, SD=0.46$), Social Bookmarks ($Mean=0.42, SD=0.73$), and Social Cataloging ($Mean=0.28, SD=0.68$). The grand means also revealed that two items had more time spent contributing per week for work/school

than non-work/non-school: Wikis ($Mean=0.33$, $SD=0.75$), Video Sharing ($Mean=0.16$, $SD=.61$). Overall, Librarians issued the highest mean time spent contributing per week to “Social Networking non-work/non-school” ($Mean=0.77$, $SD=1.08$). There appeared to be six Web 2.0 tools that had more time spent contributing per week for non-work/non-school than for work/school: Blogs ($Mean=0.55$, $SD=1.08$), Social Networking ($Mean=0.77$, $SD=1.08$), Video Sharing ($Mean=0.11$, $SD=0.49$), Social Tagging ($Mean=0.31$, $SD=0.73$), Social Bookmarking ($Mean=0.45$, $SD=0.90$), and Social Cataloging ($Mean=0.30$, $SD=0.66$). The librarian means also revealed that Wikis had more time spent contributing per week for work/school than non-work/non-school ($Mean=0.68$, $SD=1.05$). Overall, students issued the highest mean time spent contributing per week to “Social Networking non-work/non-school” ($Mean=1.08$, $SD=1.17$). There appeared to be six Web 2.0 tools that had more time spent contributing per week for non-work/non-school than for work/school: Blogs ($Mean=0.51$, $SD=0.92$), Wikis ($Mean=0.25$, $SD=0.64$), Social Networking ($Mean=1.08$, $SD=1.17$), Social Tagging ($Mean=0.05$, $SD=0.23$), Social Bookmarking ($Mean=0.40$, $SD=0.64$), and Social Cataloging ($Mean=0.27$, $SD=0.68$). The student means also revealed that Video Sharing had more time spent contributing per week for work/school than non-work/non-school ($Mean=0.19$, $SD=0.69$). The means and standard deviations are included in Table 3.2

Table 3.3
Overall Usage Frequencies

	Students (n=6232)			Librarians (n=2601)			Overall (n=8833)		
Hours spent per week contributing to	n	M	SD	n	M	SD	n	M	SD
Blogs									
Work/School	6232	0.18	0.43	2601	0.45	0.74	8833	0.26	0.55
Non-Work /Non-School	6232	0.51	0.92	2601	0.55	1.08	8833	0.52	0.97
Wikis									
Work/School	6232	0.19	0.51	2601	0.68	1.05	8833	0.33	0.75
Non-Work /Non-School	6113	0.25	0.64	2601	0.14	0.42	8714	0.22	0.59
Social Networking									
Work/School	6232	0.18	0.68	2601	0.34	0.63	8833	0.23	0.67
Non-Work /Non-School	6232	1.08	1.17	2601	0.77	1.08	8833	0.99	1.15
Video Sharing									
Work/School	6232	0.19	0.69	2601	0.07	0.37	8833	0.16	0.61
Non-Work /Non-School	6232	0.12	0.32	2601	0.11	0.49	8833	0.12	0.38
Social Tagging									
Work/School	6118	0.04	0.19	2601	0.19	0.67	8719	0.08	0.40
Non-Work /Non-School	6232	0.05	0.23	2601	0.31	0.73	8833	0.13	0.46
Social Bookmarks									
Work/School	6232	0.16	0.36	2601	0.42	0.83	8833	0.23	0.56
Non-Work /Non-School	6232	0.40	0.64	2601	0.45	0.90	8833	0.42	0.73

Table 3.3
Overall Usage Frequencies

	Students (n=6232)			Librarians (n=2601)			Overall (n=8833)		
Social Cataloging									
Work/School	6232	0.00	0.00	2601	0.04	0.20	8833	0.01	0.11
Non-Work /Non-School	6232	0.27	0.68	2601	0.30	0.66	8833	0.28	0.68

In order to determine more detailed and robust comparisons between librarians and students with regard to usage of Web 2.0, a multivariate analysis of variance was run in SPSS with the dependent variables of Web 2.0 usage (“Hours spent per week contributing to Blogs for work/school”, “Hours spent per week contributing to Blogs for non-work/non-school”, “Hours spent per week contributing to Wikis for work/school”, “Hours spent per week contributing to Wikis for non-work/non-school”, “Hours spent per week contributing to Social Networking for work/school”, “Hours spent per week contributing to Social Networking for non-work/non-school”, “Hours spent per week contributing to Video Sharing for work/school”, “Hours spent per week contributing to Video Sharing for non-work/non-school”, “Hours spent per week contributing to Social Tagging for work/school”, “Hours spent per week contributing to Social Tagging for non-work/non-school”, “Hours spent per week contributing to Social Bookmarking for work/school”, “Hours spent per week contributing to Social Bookmarking for non-work/non-school”, “Hours spent per week contributing to Social Cataloging for

work/school”, “Hours spent per week contributing to Social Cataloging for non-work/non-school”,) and the independent variables of Gender (male or female), Classification (Librarian or Student), and Highest Degree (Undergraduate or Masters). The original demographics did have a category of gender “Trans.” After examining the data in total, it was determined that the Trans group represented less than one half of one percent of the total sample. Therefore, Gender was limited to male or female. There were several options for indicating highest degree (“High School”, “Associates”, “Undergraduate”, “Masters”, “Doctoral”), however, there were no “High School” or “Associates” respondents, and it was determined that the “Doctoral” group, could be folded in with “Masters” respondents. In order to control for Type 1 error and to create a more stringent p value, the standard p value of .01 was divided by 10 (number of tests run in MANOVA) to arrive at the new p value of .001. All significance was gauged against the .001 p value, which is also the most stringent p value that SPSS can report.

When examining the between group effects from the MANOVA, two of the independent variables showed significance, “Classification”, $F(14,0.01) = 4.60, p < .001$; and “Highest Degree, $F(14,0.01) = 2.78, p < .001$. Significance was found in two of the interactions in the between group effects: “Classification X Highest Degree”, $F(14,0.01) = 3.16, p < .001$; and “Gender X Classification X Highest Degree, $F(14,0.01) = 3.61, p < .001$. Between group effects are listed in Table 3.4.

Table 3.4
MANOVA Between-Group Effects for Usage of Web 2.0

Source	df	Roy's θ	F
Gender	14.00	0.01	2.61
Classification*	14.00	0.01	4.60
Highest Degree*	14.00	0.01	2.78
Gender X Classification	14.00	0.00	2.34
Gender X Highest Degree	14.00	0.01	2.53
Classification X Highest Degree*	14.00	0.01	3.16
Gender X Classification X Highest Degree*	14.00	0.01	3.61
Error	7815		

*All F statistics are exact. Roy's θ measures the strength of the effect, and it equals η^2 .
 * $p < .001$.*

A test of between-subjects effects revealed that the overall Web 2.0 usage items do show significance, "Time spent writing Blogs work/school", $F(7,0.08) = 98.62, p < .001$; "Time spent writing Blogs non-work/non-school", $F(7,0.03) = 34.06, p < .001$; "Time spent writing Wikis work/school", $F(7,0.16) = 216.74, p < .001$; "Time spent writing Wikis non-work/non-school", $F(7,0.03) = 33.22, p < .001$; "Time spent contributing to Social Networking work/school", $F(7,0.02) = 25.69, p < .001$; "Time spent contributing to Social Networking non-work/non-school", $F(7,0.08) = 93.00, p < .001$; "Time spent contributing to Video Sharing work/school", $F(7,0.06) = 72.8, p < .001$; "Time spent contributing to Video Sharing non-work/non-school", $F(7,0.08) = 91.16, p < .001$; "Time spent writing Social Tags work/school", $F(7,0.08) = 93.29, p < .001$; "Time spent writing Social Tags non-work/non-school", $F(7,0.11) = 134.27, p < .001$.

.001; “Time spent contributing to Social Bookmarks work/school”, $F(7,0.10) = 119.47, p < .001$; “Time spent contributing to Social Bookmarks non-work/non-school”, $F(7,0.04) = 42.03, p < .001$; “Time spent contributing to Social Cataloging work/school”, $F(7,0.17) = 232.50, p < .001$; and “Time spent contributing to Social Cataloging non-work/non-school”, $F(7,0.00) = 4.89, p < .001$. For the between subject effects, significance was found in the interaction of “Gender” and “Time spent contributing to Social Cataloging work/school”, $F(7,0.00) = 22.46, p < .001$; in the interaction of “Classification” and “Time spent contributing to Wikis for work/school”, $F(7,0.00) = 13.08, p < .001$; and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 27.86, p < .001$; in the interaction of “Highest Degree” and “Time spent contributing to social cataloging for work/school”, $F(7,0.00) = 13.38, p < .001$; in the interaction of “Gender” and “Classification” and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 22.46, p < .001$; in the interaction of “Gender” and “Highest Degree” and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 17.62, p < .001$; in the interaction of “Classification” and “Highest Degree” and “Time spent writing blogs for non-work/non-school”, $F(7,0.00) = 12.26, p < .001$; and “Time spent contributing to Social Networking for non-work/non-school”, $F(7,0.00) = 12.41, p < .001$; and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 13.38, p < .001$; and in the interaction of “Gender”, “Classification”, “Highest Degree” and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 17.62, p < .001$. Between-subject effects are listed in Table 3.5

Table 3.5
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
Corrected Model	Time Spent Writing Blogs Work/School*	7	98.62	0.08
	Time Spent Writing Blogs Non-Work/Non-School*	7	34.06	0.03
	Time Spent Contributing to Wikis Work/School*	7	216.74	0.16
	Time Spent Contributing to Wikis Non-Work/Non-School*	7	33.22	0.03
	Time Spent Contributing to Social Networking Work/School*	7	25.69	0.02
	Time Spent Contributing to Social Networking Non-Work/Non-School*	7	93.00	0.08

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Contributing to Video Sharing Work/School*			
	Time Spent Contributing to Video Sharing Non-Work/Non-School	7	91.16	0.08
	Time Spent Contributing to Social Tagging Work/School*	7	93.29	0.08
	Time Spent Contributing to Social Tagging Non-Work/Non-School	7	134.27	0.11
	Time Spent Contributing to Social Bookmarking Work/School*	7	119.47	0.10

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School*	7	42.03	0.04
	Time Spent Contributing to Social Cataloging Work/School*	7	232.50	0.17
	Time Spent Contributing to Social Cataloging Non-Work/Non- School*	7	4.89	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
Gender	Time Spent Writing Blogs Work/School	1	0.87	0.00
	Time Spent Writing Blogs Non-Work/Non-School	1	5.27	0.00
	Time Spent Contributing to Wikis Work/School	1	0.06	0.00
	Time Spent Contributing to Wikis Non-Work/Non-School	1	0.23	0.00
	Time Spent Contributing to Social Networking Work/School	1	0.27	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Networking Non-Work/Non- School	1	0.57	0.00
	Time Spent Contributing to Video Sharing Work/School	1	1.15	0.00
	Time Spent Contributing to Video Sharing Non- Work/Non-School	1	0.07	0.00
	Time Spent Contributing to Social Tagging Work/School	1	0.13	0.00
	Time Spent Contributing to Social Tagging Non-Work/Non- School	1	0.04	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Bookmarking Work/School	1	0.47	0.00
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School	1	0.00	0.00
	Time Spent Contributing to Social Cataloging Work/School*	1	22.46	0.00
	Time Spent Contributing to Social Cataloging Non-Work/Non- School	1	0.01	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
Classification	Time Spent Writing Blogs Work/School	1	8.33	0.00
	Time Spent Writing Blogs Non-Work/Non-School	1	0.01	0.00
	Time Spent Contributing to Wikis Work/School*	1	13.08	0.00
	Time Spent Contributing to Wikis Non-Work/Non-School	1	0.27	0.00
	Time Spent Contributing to Social Networking Work/School	1	2.46	0.00
	Time Spent Contributing to Social Networking Non-Work/Non-School	1	0.01	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Video Sharing Work/School	1	0.06	0.00
	Time Spent Contributing to Video Sharing Non- Work/Non-School	1	2.14	0.00
	Time Spent Contributing to Social Tagging Work/School	1	4.18	0.00
	Time Spent Contributing to Social Tagging Non-Work/Non- School	1	7.73	0.00
	Time Spent Contributing to Social Bookmarking Work/School	1	7.44	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Bookmarking Non-Work/Non-School	1	0.09	0.00
	Time Spent Contributing to Social Cataloging Work/School*	1	27.86	0.00
	Time Spent Contributing to Social Cataloging Non-Work/Non-School	1	0.64	0.00
Highest Degree	Time Spent Writing Blogs Work/School	1	0.53	0.00
	Time Spent Writing Blogs Non-Work/Non-School	1	0.15	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Wikis Work/School	1	1.29	0.00
	Time Spent Contributing to Wikis Non- Work/Non-School	1	1.45	0.00
	Time Spent Contributing to Social Networking Work/School	1	0.05	0.00
	Time Spent Contributing to Social Networking Non-Work/Non- School	1	0.29	0.00
	Time Spent Contributing to Video Sharing Work/School	1	0.42	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Video Sharing Non- Work/Non-School	1	10.73	0.00
	Time Spent Contributing to Social Tagging Work/School	1	0.27	0.00
	Time Spent Contributing to Social Tagging Non-Work/Non- School	1	0.00	0.00
	Time Spent Contributing to Social Bookmarking Work/School	1	1.57	0.00
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School	1	2.10	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Cataloging Work/School*	1	13.38	0.00
	Time Spent Contributing to Social Cataloging Non-Work/Non-School	1	0.26	0.00
Gender* Classification	Time Spent Writing Blogs Work/School	1	0.00	0.00
	Time Spent Writing Blogs Non-Work/Non-School	1	0.39	0.00
	Time Spent Contributing to Wikis Work/School	1	0.12	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Wikis Non- Work/Non-School	1	0.57	0.00
	Time Spent Contributing to Social Networking Work/School	1	0.49	0.00
	Time Spent Contributing to Social Networking Non-Work/Non- School	1	0.93	0.00
	Time Spent Contributing to Video Sharing Work/School	1	0.18	0.00
	Time Spent Contributing to Video Sharing Non- Work/Non-School	1	0.01	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Tagging Work/School	1	0.40	0.00
	Time Spent Contributing to Social Tagging Non-Work/Non- School	1	0.17	0.00
	Time Spent Contributing to Social Bookmarking Work/School	1	0.44	0.00
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School	1	0.19	0.00
	Time Spent Contributing to Social Cataloging Work/School*	1	22.46	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Cataloging Non-Work/Non-School	1	0.68	0.00
Gender * Highest Degree	Time Spent Writing Blogs Work/School	1	0.00	0.00
	Time Spent Writing Blogs Non-Work/Non-School	1	0.01	0.00
	Time Spent Contributing to Wikis Work/School	1	2.33	0.00
	Time Spent Contributing to Wikis Non-Work/Non-School	1	0.06	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Networking Work/School	1	0.25	0.00
	Time Spent Contributing to Social Networking Non-Work/Non- School	1	0.01	0.00
	Time Spent Contributing to Video Sharing Work/School	1	0.70	0.00
	Time Spent Contributing to Video Sharing Non- Work/Non-School	1	0.21	0.00
	Time Spent Contributing to Social Tagging Work/School	1	2.45	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Tagging Non-Work/Non- School	1	1.47	0.00
	Time Spent Contributing to Social Bookmarking Work/School	1	5.39	0.00
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School	1	0.45	0.00
	Time Spent Contributing to Social Cataloging Work/School*	1	17.62	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Cataloging Non-Work/Non-School	1	0.37	0.00
Classification * Highest Degree	Time Spent Writing Blogs Work/School	1	0.04	0.00
	Time Spent Writing Blogs Non-Work/Non-School*	1	12.26	0.00
	Time Spent Contributing to Wikis Work/School	1	0.23	0.00
	Time Spent Contributing to Wikis Non-Work/Non-School	1	0.20	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Networking Work/School	1	0.41	0.00
	Time Spent Contributing to Social Networking Non-Work/Non- School*	1	12.41	0.00
	Time Spent Contributing to Video Sharing Work/School	1	0.19	0.00
	Time Spent Contributing to Video Sharing Non- Work/Non-School	1	1.32	0.00
	Time Spent Contributing to Social Tagging Work/School	1	0.06	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Tagging Non-Work/Non- School	1	0.04	0.00
	Time Spent Contributing to Social Bookmarking Work/School	1	0.10	0.00
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School	1	1.49	0.00
	Time Spent Contributing to Social Cataloging Work/School*	1	13.38	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Cataloging Non-Work/Non-School	1	0.16	0.00
Gender * Classification * Highest Degree	Time Spent Writing Blogs Work/School	1	0.00	0.00
	Time Spent Writing Blogs Non-Work/Non-School	1	7.27	0.00
	Time Spent Contributing to Wikis Work/School	1	0.47	0.00
	Time Spent Contributing to Wikis Non-Work/Non-School	1	2.21	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Networking Work/School	1	0.01	0.00
	Time Spent Contributing to Social Networking Non-Work/Non- School	1	8.67	0.00
	Time Spent Contributing to Video Sharing Work/School	1	0.06	0.00
	Time Spent Contributing to Video Sharing Non- Work/Non-School	1	0.17	0.00
	Time Spent Contributing to Social Tagging Work/School	1	3.36	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Tagging Non-Work/Non- School	1	1.00	0.00
	Time Spent Contributing to Social Bookmarking Work/School	1	2.01	0.00
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School	1	4.62	0.00
	Time Spent Contributing to Social Cataloging Work/School*	1	17.62	0.00

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Cataloging Non-Work/Non-School	1	0.01	0.00
Error	Time Spent Writing Blogs Work/School	7828		
	Time Spent Writing Blogs Non-Work/Non-School	7828		
	Time Spent Contributing to Wikis Work/School	7828		
	Time Spent Contributing to Wikis Non-Work/Non-School	7828		

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Networking Work/School	7828		
	Time Spent Contributing to Social Networking Non-Work/Non- School	7828		
	Time Spent Contributing to Video Sharing Work/School	7828		
	Time Spent Contributing to Video Sharing Non- Work/Non-School	7828		
	Time Spent Contributing to Social Tagging Work/School	7828		

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Tagging Non-Work/Non- School	7828		
	Time Spent Contributing to Social Bookmarking Work/School	7828		
	Time Spent Contributing to Social Bookmarking Non- Work/Non-School	7828		
	Time Spent Contributing to Social Cataloging Work/School	7828		

Table 3.5 (Continued)
Between-subject Effects for Web 2.0 Usage

Source	Dependent Variable	df	F	η^2
	Time Spent Contributing to Social Cataloging Non-Work/Non- School	7828		

To further examine the significant differences in the between-subject effects, means and standard deviations were calculated. Of the ten significant differences found, the breakdown of means and standard deviations reveals the following: a.) For the interaction of “Gender” and “Time spent contributing to Social Cataloging work/school”, $F(7,0.00) = 22.46, p < .001$; males ($Mean=0.06, SD=0.24$) had a higher mean time than did females ($Mean=0.01, SD=0.078$); b.) For the interaction of “Classification” and “Time spent contributing to Wikis for work/school”, $F(7,0.00) = 13.08, p < .001$; librarians had a higher mean time ($Mean=0.71, SD=0.39$) than did students ($Mean=0.12, SD=0.39$); c.) “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 27.86, p < .001$; librarians had a higher mean time ($Mean=0.05, SD=0.209$) than did students ($Mean=0.00, SD=0.08$), d.) For the interaction of “Highest Degree” and “Time

spent contributing to social cataloging for work/school”, $F(7,0.00) = 13.38, p < .001$; respondents with a graduate degree as the highest degree had a higher mean time ($Mean=0.02, SD=0.13$) than did respondents with an undergraduate degree as the highest degree ($Mean=0.01, SD=0.10$); e.) For the interaction of “Gender” and “Classification” and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 22.46, p < .001$; male librarians had a higher mean time ($Mean=0.11, SD=0.31$) than did male students ($Mean=0.00, SD=0.00$), and female librarians had a higher mean time ($Mean=0.02, SD=0.15$), than did female students ($Mean=0.00, SD=0.00$); f.) For the interaction of “Gender” and “Highest Degree” and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 17.62, p < .001$; males with undergraduate as highest degree had a mean time of ($Mean=0.06, SD=0.23$), females with undergraduate degree as highest degree had a mean time of ($Mean=0.00, SD=0.00$), males with graduate degree as highest degree had a mean time of ($Mean=0.06, SD=0.24$) and females with graduate degree as highest degree had a mean time of ($Mean=0.01, SD=0.10$); g.) For the interaction of “Classification” and “Highest Degree” and “Time spent writing blogs for non-work/non-school”, $F(7,0.00) = 12.26, p < .001$; students with graduate degree as highest degree had a mean time of ($Mean=0.63, SD=1.06$), students with undergraduate degree as highest degree had a mean time of ($Mean=0.51, SD=0.86$), librarians with an undergraduate degree as highest degree had a mean time of ($Mean=1.03, SD=1.520$) and librarians with a graduate degree as highest degree had a mean time of ($Mean=0.48, SD=0.95$); h.) For the interaction of “Classification” and “Highest Degree” and “Time spent contributing to Social Networking for non-work/non-school”, $F(7,0.00) = 12.41, p < .001$; students with graduate degree as highest degree had

a mean time of ($Mean=1.18, SD=1.298$), students with undergraduate degree as highest degree had a mean time of ($Mean=1.03, SD=1.143$), librarians with an undergraduate degree as highest degree had a mean time of ($Mean=1.36, SD=1.435$) and librarians with a graduate degree as highest degree had a mean time of ($Mean=0.68, SD=0.95$), i.) For the interaction of “Classification” and “Highest Degree” and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 13.38, p < .001$; librarians with an undergraduate as the highest degree had a mean time of ($Mean=0.09, SD=0.28$); librarians with a graduate degree as the highest degree had a mean time of ($Mean=0.04, SD=0.19$); students with an undergraduate degree as the highest degree had a mean time of ($Mean=0.00, SD=0.00$), students with a graduate degree as highest degree had a mean time of ($Mean=0.00, SD=0.00$), 10.) And in the interaction of “Gender”, “Classification”, “Highest Degree” and “Time spent contributing to Social Cataloging for work/school”, $F(7,0.00) = 17.62, p < .001$; male students with highest degree as undergraduate degree had a mean time of ($Mean=0.00, SD=0.00$); male students with graduate degree as highest degree had a mean time of ($Mean=0.00, SD=NA$); male librarians with highest degree of undergraduate degree had a mean time of ($Mean=0.48, SD=0.503$); male librarians with highest degree of graduate degree had a mean time of ($Mean=0.06, SD=0.23$); female students with highest degree of undergraduate degree had a mean time of ($Mean=0.00, SD=0.00$); female students with highest degree of graduate degree had a mean time of ($Mean=0.00, SD=0.00$); female librarians with highest degree of undergraduate degree had a mean time of ($Mean=0.00, SD=0.00$); and female librarians with highest degree of graduate degree had a mean time of ($Mean=0.01, SD=0.10$).

Means, standard deviations, and n are listed in Table 3.4.

Table 3.6
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Undergraduate or Masters)	M	SD	N	
Time Spent Writing Blogs Work/School	male	student	undergraduate	0.07	0.26	492	
			graduate	0.00	.	1	
			Total	0.07	0.26	493	
			librarian	undergraduate	0.48	0.50	73
			graduate	0.37	0.80	552	
			Total	0.38	0.77	625	
			Total	undergraduate	0.12	0.33	565
				graduate	0.37	0.80	553
	female	student	undergraduate	0.20	0.51	2323	
			graduate	0.12	0.33	2652	
			Total	0.16	0.43	4975	
			librarian	undergraduate	0.63	0.73	325
			graduate	0.48	0.75	1418	
			Total	0.51	0.75	1743	
			Total	undergraduate	0.25	0.56	2648
				graduate	0.25	0.54	4070
Total	student	undergraduate	0.17	0.48	2815		
		graduate	0.12	0.33	2653		
		Total	0.15	0.41	5468		
		librarian	undergraduate	0.60	0.69	398	
		graduate	0.45	0.77	1970		
		Total	0.48	0.76	2368		
		Total	undergraduate	0.23	0.53	3213	
			graduate	0.26	0.58	4623	

Table 3.6 (Continued)

Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Undergraduate or Masters)	M	SD	N
Time Spent Writing Blogs Non- Work/Non- School	male	student	Total	0.25	0.56	7836
			undergraduate	0.58	0.49	492
		librarian	graduate	2.00	.	1
			Total	0.58	0.50	493
			undergraduate	1.95	1.99	73
			graduate	0.27	0.47	552
	female	student	Total	0.47	0.97	625
			undergraduate	0.75	0.96	565
		librarian	graduate	0.27	0.47	553
			Total	0.52	0.80	1118
			undergraduate	0.49	0.92	2323
			graduate	0.62	1.06	2652
	Total	student	Total	0.56	1.00	4975
			undergraduate	0.82	1.31	325
		librarian	graduate	0.56	1.07	1418
			Total	0.61	1.12	1743
			undergraduate	0.53	0.98	2648
			graduate	0.60	1.07	4070
Total	student	Total	0.57	1.03	6718	
		undergraduate	0.51	0.86	2815	
	librarian	graduate	0.63	1.06	2653	
		Total	0.56	0.96	5468	
		undergraduate	1.03	1.52	398	
		graduate	0.48	0.95	1970	
Total	Total	0.57	1.09	2368		
	undergraduate	0.57	0.98	3213		
Total	graduate	0.56	1.02	4623		
	Total	0.57	1.00	7836		

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N
Time Spent Contributing to Wikis Work/School	male	student	undergraduate	0.25	0.43	492
			graduate	0.00	.	1
		Total		0.25	0.43	493
		librarian	undergraduate	1.00	0.00	73
				graduate	0.35	0.72
			Total		0.43	0.70
	Total		0.35	0.48	565	
	female	student	undergraduate	0.09	0.29	2323
			graduate	0.12	0.45	2652
		Total		0.11	0.38	4975
		librarian	undergraduate	0.73	0.93	325
				graduate	0.83	1.22
			Total		0.81	1.17
	Total		0.17	0.47	2648	
	Total	student	undergraduate	0.12	0.32	2815
			graduate	0.37	0.87	4070
		Total		0.29	0.75	6718
		librarian	undergraduate	0.78	0.85	398
graduate				0.69	1.12	1970
Total			0.71	1.08	2368	
Total			0.20	0.48	3213	
		graduate	0.37	0.86	4623	
		Total	0.30	0.73	7836	

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

Time Spent Contributing to Wikis Non- Work/Non- School	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N		
		male	student	undergraduate	0.51	0.50	492	
graduate				0.00	.	1		
librarian			Total	0.51	0.50	493		
			undergraduate	0.03	0.16	73		
			graduate	0.10	0.33	552		
			Total	0.09	0.32	625		
			Total	0.44	0.50	565		
			female	student	graduate	0.10	0.33	553
					Total	0.27	0.46	1118
				librarian	undergraduate	0.21	0.40	2323
graduate		0.22			0.83	2652		
Total		0.21			0.67	4975		
undergraduate		0.40			0.74	325		
graduate		0.10			0.34	1418		
Total		0.16			0.46	1743		
Total		0.23			0.46	2648		
Total		student			graduate	0.18	0.70	4070
			Total	0.20	0.62	6718		
		librarian	undergraduate	0.26	0.44	2815		
			graduate	0.22	0.83	2653		
	Total		0.24	0.66	5468			
	undergraduate		0.33	0.68	398			
	graduate		0.10	0.34	1970			
	Total		0.14	0.43	2368			
	Total		0.27	0.48	3213			
	graduate		0.17	0.67	4623			
Total	0.21	0.60	7836					

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Undergraduate or Masters)	M	SD	N
Time Spent Contributing to Social Networking Work/School	male	student	undergraduate	0.00	0.00	492
			graduate	0.00	.	1
			Total	0.00	0.00	493
			librarian	undergraduate	0.51	0.50
		Total	graduate	0.26	0.58	552
			Total	0.29	0.57	625
			undergraduate	0.07	0.25	565
			graduate	0.26	0.58	553
	female	student	Total	0.16	0.45	1118
			undergraduate	0.14	0.56	2323
			graduate	0.28	0.87	2652
			Total	0.21	0.75	4975
		librarian	undergraduate	0.38	0.65	325
			graduate	0.33	0.56	1418
			Total	0.34	0.58	1743
			Total	undergraduate	0.17	0.57
Total	student	graduate	0.30	0.78	4070	
		Total	0.25	0.71	6718	
		undergraduate	0.11	0.51	2815	
		graduate	0.28	0.87	2653	
	librarian	Total	0.19	0.71	5468	
		undergraduate	0.40	0.63	398	
		graduate	0.31	0.57	1970	
		Total	0.33	0.58	2368	
Total	undergraduate	0.15	0.53	3213		
	graduate	0.29	0.76	4623		
Total	Total	0.23	0.68	7836		

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N
Time Spent Contributing to Social Networking Non- Work/Non- School	male	student	undergraduate	0.25	0.44	492
			graduate	2.00	.	1
			Total	0.26	0.44	493
			librarian	undergraduate	2.44	1.51
		Total	graduate	0.44	0.93	552
			Total	0.68	1.20	625
			undergraduate	0.54	1.00	565
			graduate	0.45	0.93	553
	female	student	Total	0.49	0.96	1118
			undergraduate	1.20	1.18	2323
			graduate	1.18	1.30	2652
			Total	1.19	1.24	4975
		librarian	undergraduate	1.12	1.30	325
			graduate	0.77	0.95	1418
			Total	0.83	1.03	1743
			Total	1.19	1.19	2648
Total	student	graduate	1.03	1.20	4070	
		Total	1.09	1.20	6718	
		undergraduate	1.03	1.14	2815	
		graduate	1.18	1.30	2653	
	librarian	Total	1.10	1.22	5468	
		undergraduate	1.36	1.44	398	
		graduate	0.68	0.95	1970	
		Total	0.79	1.08	2368	
Total	undergraduate	1.07	1.19	3213		
	graduate	0.96	1.19	4623		
		Total	1.01	1.19	7836	

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N
Time Spent Contributing to Video Sharing Work/School	male	student	undergraduate	0.00	0.00	492
			graduate	0.00	.	1
		librarian	Total	0.00	0.00	493
			undergraduate	0.00	0.00	73
		Total	graduate	0.06	0.23	552
			Total	0.05	0.22	625
	female	student	undergraduate	0.41	1.04	2323
			graduate	0.06	0.24	2652
		librarian	Total	0.22	0.75	4975
			undergraduate	0.19	0.40	325
		Total	graduate	0.07	0.44	1418
			Total	0.09	0.44	1743
	Total	student	undergraduate	0.34	0.96	2815
			graduate	0.07	0.33	4070
		librarian	Total	0.19	0.69	6718
			undergraduate	0.16	0.37	398
		Total	graduate	0.07	0.40	1970
			Total	0.08	0.39	2368
Total	undergraduate	0.31	0.91	3213		
	graduate	0.06	0.32	4623		
Total	Total	0.17	0.64	7836		

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Undergraduate or Masters)	M	SD	N
Time Spent Contributing to Video Sharing Non-Work/Non-School	male	student	undergraduate	0.28	0.45	492
			graduate	0.00	.	1
			Total	0.28	0.45	493
			librarian	undergraduate	0.48	0.50
		Total	graduate	0.06	0.23	552
			Total	0.11	0.31	625
			undergraduate	0.31	0.46	565
			graduate	0.06	0.23	553
	female	student	Total	0.18	0.39	1118
			undergraduate	0.17	0.37	2323
			graduate	0.05	0.21	2652
			Total	0.10	0.30	4975
		librarian	undergraduate	0.46	1.17	325
			graduate	0.05	0.21	1418
			Total	0.13	0.56	1743
			Total	undergraduate	0.20	0.55
Total	student	graduate	0.05	0.21	4070	
		Total	0.11	0.39	6718	
		undergraduate	0.19	0.39	2815	
		graduate	0.05	0.21	2653	
	librarian	Total	0.12	0.32	5468	
		undergraduate	0.46	1.08	398	
		graduate	0.05	0.22	1970	
		Total	0.12	0.51	2368	
Total	undergraduate	0.22	0.53	3213		
	graduate	0.05	0.21	4623		
		Total	0.12	0.39	7836	

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N
Time Spent Contributing to Social Tagging Work/School	male	student	undergraduate	0.00	0.00	492
			graduate	0.00	.	1
		librarian	Total	0.00	0.00	493
			undergraduate	0.48	0.50	73
			graduate	0.06	0.24	552
			Total	0.11	0.31	625
	female	student	undergraduate	0.06	0.24	553
			Total	0.06	0.24	1118
		librarian	undergraduate	0.05	0.23	2323
			graduate	0.00	0.00	2652
			Total	0.03	0.16	4975
			undergraduate	0.04	0.19	325
	Total	student	graduate	0.30	0.87	1418
			Total	0.25	0.79	1743
		librarian	undergraduate	0.05	0.22	2648
			graduate	0.10	0.53	4070
			Total	0.08	0.44	6718
			undergraduate	0.04	0.21	2815
Total	student	graduate	0.00	0.00	2653	
		Total	0.02	0.15	5468	
	librarian	undergraduate	0.12	0.32	398	
		graduate	0.23	0.75	1970	
		Total	0.21	0.70	2368	
		undergraduate	0.05	0.23	3213	
Total	graduate	0.10	0.50	4623		
	Total	0.08	0.41	7836		

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N
Time Spent Contributing to Social Tagging Non- Work/Non- School	male	student	undergraduate	0.00	0.00	492
			graduate	0.00	.	1
			Total	0.00	0.00	493
			librarian	undergraduate	0.48	0.50
		graduate		0.22	0.41	552
		Total		0.25	0.43	625
		Total		undergraduate	0.06	0.24
		female	student	graduate	0.22	0.41
	Total			0.14	0.35	1118
	undergraduate			0.00	0.03	2323
	graduate			0.05	0.21	2652
	librarian		Total	0.03	0.16	4975
			undergraduate	0.17	0.43	325
			graduate	0.39	0.91	1418
			Total	0.35	0.84	1743
	Total	student	undergraduate	0.02	0.16	2648
graduate			0.17	0.59	4070	
Total			0.11	0.47	6718	
undergraduate			0.00	0.03	2815	
librarian		graduate	0.05	0.21	2653	
		Total	0.02	0.15	5468	
		undergraduate	0.23	0.46	398	
		graduate	0.34	0.80	1970	
Total	Total	0.32	0.76	2368		
	undergraduate	0.03	0.18	3213		
		graduate	0.17	0.57	4623	
		Total	0.11	0.46	7836	

Table 3.6 (Continued)
Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Undergraduate or Masters)	M	SD	N
Time Spent Contributing to Social Bookmarking Work/School	male	student	undergraduate	0.25	0.44	492
			graduate	0.00	.	1
			Total	0.25	0.44	493
			librarian	undergraduate	0.96	0.20
		Total	graduate	0.23	0.55	552
			Total	0.31	0.58	625
			undergraduate	0.35	0.48	565
			graduate	0.23	0.55	553
	female	student	undergraduate	0.13	0.33	2323
			graduate	0.12	0.33	2652
			Total	0.12	0.33	4975
			librarian	undergraduate	0.26	0.64
		Total	graduate	0.56	0.99	1418
			Total	0.50	0.94	1743
			undergraduate	0.14	0.39	2648
			graduate	0.27	0.67	4070
Total	student	Total	0.22	0.58	6718	
		undergraduate	0.15	0.36	2815	
		graduate	0.12	0.33	2653	
		Total	0.14	0.34	5468	
	librarian	undergraduate	0.39	0.65	398	
		graduate	0.47	0.90	1970	
		Total	0.45	0.86	2368	
		Total	undergraduate	0.18	0.41	3213
Total	graduate	0.27	0.66	4623		
	Total	0.23	0.57	7836		

Table 3.6 (Continued)

Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N
Time Spent Contributing to Social Bookmarking Non- Work/Non- School	male	student	undergraduate	0.00	0.00	492
			graduate	1.00	.	1
			Total	0.00	0.05	493
			librarian	undergraduate	0.48	0.50
		graduate		0.25	0.69	552
		Total		0.28	0.67	625
		Total		undergraduate	0.06	0.24
		female	student	graduate	0.25	0.69
	Total			0.16	0.52	1118
	undergraduate			0.43	0.71	2323
	graduate			0.40	0.58	2652
	librarian		Total	0.41	0.64	4975
			undergraduate	0.29	0.62	325
			graduate	0.60	1.06	1418
			Total	0.54	1.00	1743
	Total	student	undergraduate	0.41	0.70	2648
graduate			0.47	0.79	4070	
Total			0.45	0.76	6718	
undergraduate			0.35	0.66	2815	
librarian		graduate	0.40	0.58	2653	
		Total	0.38	0.62	5468	
		undergraduate	0.32	0.61	398	
		graduate	0.50	0.99	1970	
Total	Total	0.47	0.94	2368		
	undergraduate	0.35	0.66	3213		
Total	graduate	0.44	0.78	4623		
	Total	0.41	0.73	7836		

Table 3.6 (Continued)

Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N		
Time Spent Contributing to Social Cataloging Work/School	male	student	undergraduate	0.00	0.00	492		
			graduate	0.00	.	1		
		librarian	Total	0.00	0.00	493		
			undergraduate	0.48	0.50	73		
		Total	graduate	0.06	0.23	552		
			Total	0.11	0.31	625		
	female	student	librarian	undergraduate	0.06	0.23	553	
				Total	0.06	0.24	1118	
			Total	undergraduate	0.00	0.00	2323	
				graduate	0.00	0.00	2652	
			librarian	Total	0.00	0.00	4975	
				undergraduate	0.00	0.00	325	
		Total	student	librarian	graduate	0.03	0.17	1418
					Total	0.02	0.15	1743
			Total	undergraduate	0.00	0.00	2648	
				graduate	0.01	0.10	4070	
			librarian	Total	0.01	0.08	6718	
				undergraduate	0.00	0.00	2815	
Total	student	librarian	graduate	0.00	0.00	2653		
			Total	0.00	0.00	5468		
	Total	undergraduate	0.09	0.28	398			
		graduate	0.04	0.19	1970			
	librarian	Total	0.05	0.21	2368			
		undergraduate	0.01	0.10	3213			
Total	librarian	graduate	0.02	0.12	4623			
		Total	0.01	0.12	7836			

Table 3.6 (Continued)

Means, Standard Deviations and n for Web 2.0 Usage

	Gender (Male or Female)	Librarian or Student	Highest Degree (Under- graduate or Masters)	M	SD	N		
Time Spent Contributing to Social Cataloging Non- Work/Non- School	male	student	undergraduate	0.25	0.43	492		
			graduate	0.00	.	1		
		Total			0.25	0.43	493	
		librarian	undergraduate	0.48	0.50	73		
				graduate	0.34	0.67	552	
			Total			0.36	0.66	625
	Total			0.28	0.45	565		
	female	student	graduate	0.34	0.67	553		
			Total	0.31	0.57	1118		
		librarian	undergraduate	0.28	0.90	2323		
				graduate	0.22	0.51	2652	
			Total			0.25	0.72	4975
			Total			0.19	0.54	325
	Total	student	graduate	0.30	0.70	1418		
			Total	0.28	0.67	1743		
		librarian	undergraduate	0.27	0.87	2648		
				graduate	0.24	0.59	4070	
			Total			0.25	0.71	6718
Total			0.28	0.84	2815			
Total	student	graduate	0.22	0.51	2653			
		Total	0.25	0.70	5468			
	librarian	undergraduate	0.25	0.54	398			
			graduate	0.31	0.69	1970		
		Total			0.30	0.67	2368	
		Total			0.27	0.81	3213	
Total	Total	graduate	0.26	0.60	4623			
		Total	0.26	0.69	7836			

Discussion

Addressing Research Question 3a

Research Question 3a sought to understand an overview of Web 2.0 usage by the library science arena. In order to address that overarching question, means and standard deviations were run on the librarians, students, and then overall combined group. When examining the results for overall usage, some trends are highlighted. For example, the highest mean for contributing to a Web 2.0 tool per week was for social networking for non-work/non-school, and it was the highest mean for students, librarians and the entire group. It would appear from this finding that as a whole, the library science arena is using and contributing to Social Networking tools away from work/school more than the other six Web 2.0 tools provided. One possible reason for this could be that both the librarians and the students have realized that Social Networking is not only a tool that can be used, but also a topic to learn about (McKinney, 2006). Another trend that was noted among the three groups (students, librarians, and the overall/combined group) was that consistently across five items (“Hours spent per week contributing to Blogs for non-work/non-school”, “Hours spent per week contributing to Social Networking for non-work/non-school”, “Hours spent per week contributing to Social Tagging for non-work/non-school”, “Hours spent per week contributing to Social Bookmarking for non-work/non-school”, “Hours spent per week contributing to Social Cataloging for non-work/non-school”) respondents had a higher mean time for non-work/non-school usage than work/school usage. It is important to note that this trend does not suggest that the library science community does not use these specific Web 2.0 tools for work/school, but

that more use is done away from work/school. This trend could be interpreted several ways, and one way to interpret the trend based on interactions with individuals in the library science community is that individuals in the library science community for the most part are interested in technology, information, and organization. Therefore, this trend of more use away from work/school highlights the interest in Web 2.0 to not only use it for work/school, but to use it even more away from work/school. There could be obligations at work/school that limit the use of Web 2.0, or possibly, the work/school arena does not demand as much usage of Web 2.0 at the time of the study. From the data collected, this distinction cannot be ascertained. Future research to investigate not only the amount of Web 2.0 usage in certain locations but also to ask “Why?”, would greatly benefit the library science community in understanding the role of Web 2.0. This research provides a starting point for future research not only in understanding the role of Web 2.0 in library science, but also in understanding the role of future technologies such as Web 3.0 and beyond. The same results that address the overarching research question 2a: “What is Web 2.0 usage in the library science arena?”, can also address the issue raised by Ralph and Olsen (2007) which ponders that one of the factors that contributes to a successful learning technology is widespread use and acceptance. It becomes evident after reading through the results that Web 2.0 is being used enough to contribute to a successful learning technology.

Addressing Research Question 3b

Research Question 3b sought to understand whether differences existed between librarians and students for Web 2.0 usage. In order to determine more detailed and robust comparisons between librarians and students with regard to usage of Web 2.0, a

multivariate analysis of variance was run in SPSS with the dependent variables of Web 2.0 usage (“Hours spent per week contributing to Blogs for work/school”, “Hours spent per week contributing to Blogs for non-work/non-school”, “Hours spent per week contributing to Wikis for work/school”, “Hours spent per week contributing to Wikis for non-work/non-school”, “Hours spent per week contributing to Social Networking for work/school”, “Hours spent per week contributing to Social Networking for non-work/non-school”, “Hours spent per week contributing to Video Sharing for work/school”, “Hours spent per week contributing to Video Sharing for non-work/non-school”, “Hours spent per week contributing to Social Tagging for work/school”, “Hours spent per week contributing to Social Tagging for non-work/non-school”, “Hours spent per week contributing to Social Bookmarking for work/school”, “Hours spent per week contributing to Social Bookmarking for non-work/non-school”, “Hours spent per week contributing to Social Cataloging for work/school”, “Hours spent per week contributing to Social Cataloging for non-work/non-school”,) and the independent variables of Gender (male or female), Classification (Librarian or Student), and Highest Degree (Undergraduate or Masters). When examining the results for variance of usage, some trends are highlighted.

MANOVA between-group effects

When looking at the high level of between-group effects for the MANOVA of Web 2.0 usage it is clear that there are significant differences between the librarians and the students, the highest degree of undergraduate and the highest degree of graduate degree and the combination of classification and highest degree, and the combination of gender, highest degree, and classification. The singular group differences are interesting

to note, but more importantly, it is interesting to note the interactions of the groups with the responses. There is indeed relevance with who the individual is and how a response is made. In the next section, more investigation into the specifics differences will be discussed.

MANOVA between-subject effects

One trend that is noted when examining the between-subjects effects for MANOVA of Web 2.0 usage is that most of the significant differences are clustered around one item “Time spent contributing to Social Cataloging for work/school.” When examining the differences between male librarians and female librarians, female librarians have higher mean scores than do male librarians. If one peers even deeper into the looking glass and includes the interaction of highest degree, it is revealed that although male librarians with undergraduate degree as highest degree have a higher mean usage time than do female librarians with undergraduate degree as highest degree, the opposite is true when one examines the differences between male librarians with graduate degree as highest degree to female librarians with highest degree as graduate degree. One possible explanation for the item “Time spent contributing to Social Cataloging for work/school” showing a higher mean usage time for librarians than students could be that librarians tend to use the Social Cataloging tools more for work duty than students do for class duty. Possible attributions for why male librarians with undergraduate degree as highest degree have a higher mean usage time than do female librarians with undergraduate degree as highest degree could be that male librarians with a highest degree of undergraduate degree might also be in graduate library science school and are learning about these tools, or it could be a close proximity in time between attaining the

undergraduate degree and attaining the librarian job that has kept the usage of the Web 2.0 tools fresh on the brain. Rationalizations for why female librarians with graduate degree as highest degree have a higher mean usage time than do male librarians with highest degree as graduate degree could be that the females recently graduated from graduate library science school and Web 2.0 usage is fresh on the brain, or that there indeed may be a psychological link between these demographic attributes and Social Cataloging usage for librarian work.

Two other items had significant differences as well, “Time writing Blogs for non-work/non-school” and “Time contributing to Social Networking for non-work/non-school” between students and librarians when coupled with highest degree. For “Time writing Blogs for non-work/non-school”, students with a graduate degree as highest degree had a higher mean usage time than did librarians with a graduate degree as highest degree, and oppositely, librarians with an undergraduate degree as highest degree had a higher mean usage time than did students with an undergraduate degree as highest degree. The same trend is followed when examining “Time contributing to Social Networking for non-work/non-school”; students with a graduate degree as highest degree had a higher mean usage time than did librarians with a graduate degree as highest degree, and oppositely, librarians with an undergraduate degree as highest degree had a higher mean usage time than did students with an undergraduate degree as highest degree. One possible reason for the same set of differences showing up twice could be that both the librarians with undergraduate degree as highest degree and the students with graduate degree as highest degree are in graduate library science school. This would place Web 2.0 fresh on the brain and contribute to a curiosity of Blogging and Social

Networking outside of class. Another possible reason could be that both the librarians with undergraduate degree as highest degree and the students with graduate degree as highest degree enjoy Blogging and Social Networking away from work or school, and that the typical workload at work or school doesn't satisfy the urge to Blog and Social Network, so the occurrence is higher for them than the counterparts.

Getting back to research question 3b, "Are there differences between librarians and students with regard to Web 2.0 usage?", it appears as though yes, there are differences between librarians and students with regard to Web 2.0 usage. However, what has also been revealed here is that demographic sub groupings do play a role in how responses are given. This research will guide the way toward future research in understanding differences between librarians and students with regard to Web 2.0 usage, eventually leading the way to understanding differences between librarians and students with regard to Web 3.0 usage and hopefully addressing why the demographic sub groupings play a role in how respondents use Web technologies in general.

In Summary

Again, just as noted above in the discussion of the overall/combined group usage of Web 2.0, there appears to be more usage of Web 2.0 away from work/school than for work/school. There needs to be more research done to investigate why this effect occurs and what is causing it. This research will guide future research on Web 2.0, Web 3.0 and whatever else might be the next step for information based technology. Demographics do play a part in how Web 2.0 users use Web 2.0, and more research needs to be done to address this interaction.

REFERENCES

- Abram, S. (2007, Friday, October 19, 2007). Web 2.0, Library 2.0, and Librarian 2.0: Preparing for the 2.0 World. *SirsiDynix OneSource*, from http://www.imakenews.com/sirsi/e_article000505688.cfm
- Bausch, S., & Han, L. (2006). Social networking sites grow 47 percent, year over year, reaching 45 percent of web users according to nielsen//netratings: Successful Sites Drive High Visitor Retention Rates: NetRatings, Inc. Odense, Denmark.
- Cohen, S. M. (2004). Online Social Networking Tools. [Feature Article]. *Public Libraries*, 43(5), 271-272.
- Coombs, K. A. (2007, January 2007). Building a library web Site on the pillars of web 2.0. *Computers in Libraries*.
- Fidishun, D. (2001). People servers vs. information providers: The impact of service orientation on technology training. [Feature Article]. *Information Technology and Libraries*, 20(1), 29-33.
- Gerry. (2007, June 6). LibGuides: The web 2.0 library knowledge sharing system (in Facebook). *Friends: Social Networking Sites for Engaged Library Services*. Retrieved from <http://onlinesocialnetworks.blogspot.com/2007/06/libguides-web-20-library-knowledge.html>
- Harboe-Ree, C. (2007). Just advanced librarianship: The role of academic libraries as publishers. [Feature Article]. *Australian Academic & Research Libraries*, 38(1), 15-25.
- Horrocks, I. A. N. (2008). Ontologies and the Semantic Web. *Communications of the ACM*, 51(12), 58-67.
- Huffman, K. (2006). Web 2.0: Beyond the concept: practical ways to implement RSS, podcasts, and wikis. [Feature Article]. *Education Libraries*, 29(1), 12-19.
- Jankowska, M. A. (2004). Identifying university professors' information needs in the challenging environment of information and communication technologies. [Feature Article]. *The Journal of Academic Librarianship*, 30(1), 51-66.
- Lim, S. (2007). Library informational technology workers: Their sense of belonging, role, job autonomy, and job satisfaction. [Feature Article]. *The Journal of Academic Librarianship*, 33(4), 492-500.
- Maness, J. M. (2006). Library 2.0: The next generation of Web-based library services. [Feature Article]. *Logos*, 17(3), 139-145.
- Miller, P. (2005). Web 2.0: Building the New Library. *Journal*, (45),
- McKinney, R. D. (2006). Draft proposed ALA core competencies compared to ALA-accredited, candidate, and precandidate program curricula: A preliminary analysis. [Feature Article]. *Journal of Education for Library and Information Science*, 47(1), 52-77.
- Ralph, J., & Olsen, S. (2007). Podcasting as an Educational Building Block in Academic Libraries. [Feature]. *Australian Academic & Research Libraries*, 38(4), 270-279.
- Schwartz, C. A. (2007). The University Library and the Problem of Knowledge. [Feature Article]. *College & Research Libraries*, 68(3), 238-244.
- Stoffle, C. J., & Leeder, K. (2005). Practitioners and library education: A crisis of understanding. [Feature Article]. *Journal of Education for Library and Information Science*, 46(4), 312-319.

CHAPTER 4

WEB 2.0 SELF-EFFICACY AS A PREDICTOR OF WEB 2.0 USAGE AMONG ACADEMIC LIBRARIANS AND GRADUATE LIBRARY SCHOOL STUDENTS IN COLLEGES AND UNIVERSITIES WITH ALA ACCREDITED LIBRARY SCHOOLS

According to Farrelly (2007), the image and role of the librarian has changed over the years. Farrelly states that the past role of the librarian was to be an endless storehouse for facts, relationships, knowledge and historical treasures, and that over time, as more technology has been integrated into librarianship; the role of the librarian has gone from information storehouse to information organizer. Technology in libraries can be seen in many areas, however, one area that this study focuses on is the area of the World Wide Web and more specifically, the era of the World Wide Web called “Web 2.0.” The marriage between the internet and libraries has been forged quite securely; however, one thing that is uncertain about Web 2.0 is its role in the library science arena...both in practice and in education. One part of shaping both roles, library student and librarian, is the topic of self-efficacy, for self-efficacy is believed to be a predictor of behavior outcomes (Bandura, 1977).

On Web 2.0

Hall-Ellis (2006) suggests that Web 2.0's role in graduate library education is as varied as the components that make up Web 2.0 . By examining the ALISE annual statistical publication on ALA accredited library schools, there is evidence to show that no two library schools are the same (Barron et al., 2006) . Size, location, and funding play a role in deciding what each library school is composed of, but what is more

important in deciding what role Web 2.0 plays is the actual focus of the library school (Varlejs, 2003). There are two main kinds of library schools, “I-Schools,” which are so named because of the focus on Information and Information Science, and “L-Schools,” named for their emphasis on libraries and librarianship (Van Fleet & Wallace, 2002) . A trend among L-Schools is that they are typically not as focused on cutting edge technologies of information/information technology, whereas I-Schools conversely have a more information/information science focus (Markey, 2004). Therefore, according to Clyde (2005), graduate library schools have a hard time defining importance of Web 2.0, let alone mandating its rank in curriculum. Another factor that smears the understanding of Web 2.0 is the topic of Web 3.0, the successor to Web 2.0. According to Horrocks (2008), Web 3.0 is commonly called the semantic web, because of its reliance and use of connections and threads of descriptors tied to information. Web 2.0 helps to create the descriptors for Web 3.0 that help computers or computer like entities search and retrieve information for users more discretely and more efficiently, Horrocks states. At the time of this study, Web 3.0 was still in the theoretical stage, but even so was already beginning to show signs to the world that Web 2.0 was evolving if not even showing signs of fading out, Horrocks research further states.

Self-Efficacy

There are four main sources of self-efficacy: mastery experience, vicarious experience, social persuasions, and somatic and emotional states. Mastery experiences are simply understood as past or previous experiences of success or failure. Typically, the more successes an individual has in a given experience, the higher the self-efficacy towards that experience, and more failures in a given experience typically will lower self-

efficacy (Bandura, 1986). Not as predominant as mastery experiences, but still worth mentioning is the source of self-efficacy called vicarious experience. Vicarious experience as a source for self-efficacy describes the act of an individual using an external reference to gauge his or her ability to perform a task (Bandura, 1997). For example, one might identify with someone who has the same interests or physical features (even a disability), and determine if the person of reference can complete the task, then the task is within reach. Social persuasions as a source for self-efficacy are often associated with verbal encouragement or discouragement (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003). It is important to note that the depth of the sentiment may be related to the extent of success for the persuaded as the intent is to encourage the individual to search his or her own beliefs and not rely on the external stimulus long term (Bandura, 1977). Somatic and emotional states, as the fourth source of self-efficacy may be confusing when describing them because emotion can be seen as affective or effective depending on how empowered an individual is. For example, one who believes him or herself to be a victim of mood, will therefore have sporadic self-efficacy based on the current mood. However, if an individual sees himself or herself as being in control of his or her mood, then there is a more predictable self-efficacy (Bandura, 1997).

Purpose

There are many technology products that have come through the doors of a library that have not survived for one reason or another (Nicotera, 2000). However, according to Abram (2007), one of the main factors that contributes to the success or failure of the technology product is how competent individuals feel with the technology. Although

there are several instruments available to extract from an individual his or her usage of technology (Jankowska, 2004) and several instruments used to extract his or her feeling of self-efficacy towards a technology, to date there have not been documented methods for extracting usage of Web 2.0 and self-efficacy holistically. This study seeks to extract Web 2.0 usage and Web 2.0 self-efficacy from academic librarians and graduate library school students at colleges and universities with ALA accredited graduate library schools, and examine whether self-efficacy toward Web 2.0 could be used to predict the usage of Web 2.0. The intent for gathering usage and self-efficacy of Web 2.0 data from librarians and students is two-fold: to be more in line with Ralph and Olsen's (2007) view of successful learning technology and with McKinney's (2006) notion that information and ideas that are widely used are worthy of being part of a library science curriculum. Furthermore, if self-efficacy toward Web 2.0 could predict usage of Web 2.0, then researchers could use this information to help gauge the success of Web 2.0 both in the library and in library science education.

According to Jankowska (2004), there are three main points to consider when surveying respondents about technology usage: a) What technologies are respondents using?, b) How are the respondents using those technologies?, and c) How often are those technologies being used? Jankowska's usage survey instrument is designed to query from faculty members in the university community more specifics on what information and communication technologies they use so that the academic librarian would better understand what needs to be addressed when planning and budgeting. Some examples from Jankowska's survey included such items as: a.) "How many hours per week do you use a computer?" (usage ranked from: less than 10 hours, 10-20 hours, 21-30 hours, and

more than 30 hours (p. 51); b.) “How do you use computers?” (p. 52) (select as many as used [which were deemed qualitative data]) (variables included communicating with students and peers, working on manuscripts, research proposals and conference papers, and preparing study and instructional materials for students); and c.) “Where do you use computers?” (p. 53) (select as many as used [which were qualitative data]) (variables included home and work).

Weaknesses and Strengths of Existing Technology Usage Scale

Weaknesses

In an email response from Jankowska (2007), when asked about the statistical reliability of the survey instrument, Jankowska responded that much of the original research data were not retained when Jankowska relocated. Possibly, included in that research data may have been the reliability information for the survey instrument, therefore, the reliability rating for Jankowska’s survey instrument cannot be ascertained. According to Carmines and Zeller (1979), in order for survey instruments to be of proven merit, reliability and internal consistency must be measured. In her research, Jankowska (2004) also discovered that some of the items in the survey were confusing to participants, yielding either incomplete data because of no response, or yielding skewed responses as participants incorrectly inferred what the item was querying.

Strengths

In addition to reliability and internal consistency, validity of a survey instrument must be evaluated for the instrument to have merit (Carmines & Zeller, 1979). Validity for Jankowska’s survey was achieved through a stratified random sampling. According to Laney (1993), stratified random sampling helps promote internal validity by eliminating

some of the sources of random sampling error. Another asset in ensuring validity for a survey instrument is content validity. In order to account for content validity, 12 faculty members were interviewed by Jankowska to gather preliminary information for Jankowska's study so that questions for the survey could be gauged more appropriately. Additionally, Jankowska's (2004) survey provides a nice starting point for a study on Web 2.0 usage in library science because Jankowska's audience and population were library science individuals as well. When constructing survey instruments, it is important to try to start with a working model that is centered in the domain in which one is studying (Davis et al., 2005).

When modifying the original technology usage instrument to tailor it for Web 2.0 usage, an original item that might have been stated as: "I use the following technologies," is now rephrased for this Web 2.0 study as: "I use the following Web 2.0 technologies." When constructing the survey instrument on Web 2.0 usage, several factors were taken into consideration. Two separate surveys were constructed: one set in the theme of academic librarianship and the other in the theme of graduate library education. However, both groups received the same basic type and structure of questions. As often as applicable throughout the Web 2.0 usage survey is the theme of "where do you...?" and the two areas queried in the survey instrument were "work" and "non-work" for the librarians, and "class" and "non-class" for the students. The survey is divided into two main sections, the first section asking overview questions (such as: "Please rank the following Web 2.0 tools with regard to your own use and overall use by others" and "do you...for work/class?" and "do you...not for work/class?") and the second section asking very detailed questions on each of seven Web 2.0 tools chosen for this study (such as

“About how much time each week (in hours) do you spend writing blogs?” and “Which blogging applications do you use at work/class?”). In order to gain an understanding of which Web 2.0 tools to include in this Web 2.0 study, a survey was conducted repeatedly over four semesters at a graduate library school at the beginning of the semester to newly enrolled graduate library school students. The library school students were asked to respond via a free-text box, as to what they considered to be the seven most popular Web 2.0 tools in circulation. Results on frequencies for this pilot study are included in Table 4.1, however, in summary, the seven most popular Web 2.0 tools at the time of the study were: blogs, wikis, social networking, video sharing, social tagging, social bookmarking, and social cataloging.

Table 4.1
Most Popular Web 2.0 Pilot Study Results

Web 2.0 Tool	n	%
Blogging	11	17.2
Video Sharing	8	12.5
Wikis	8	12.5
Social Bookmarking	8	12.5
Social Cataloging	7	10.9
Social Networking	7	10.9
Social Tagging	7	10.9
Communication Tools	2	3.1
Music Sharing	2	3.1
Photo Sharing	2	3.1
Document Sharing	1	1.6
Online Productivity	1	1.6
Total	64	

Within the seven tools analyzed, usage was distinguished by: quantity of time, frequency of individual contributions, quantity of variety of accounts, experience in

years, and frequency at which one checks for updates. Supplemental characteristics for usage per tool were included to query: “have you heard of ...?”, and “do you participate at work/class/non-work/non-class?”. A logic schematic is included in Figure 4.1 to further clarify how all of the components of the survey are logically linked together.

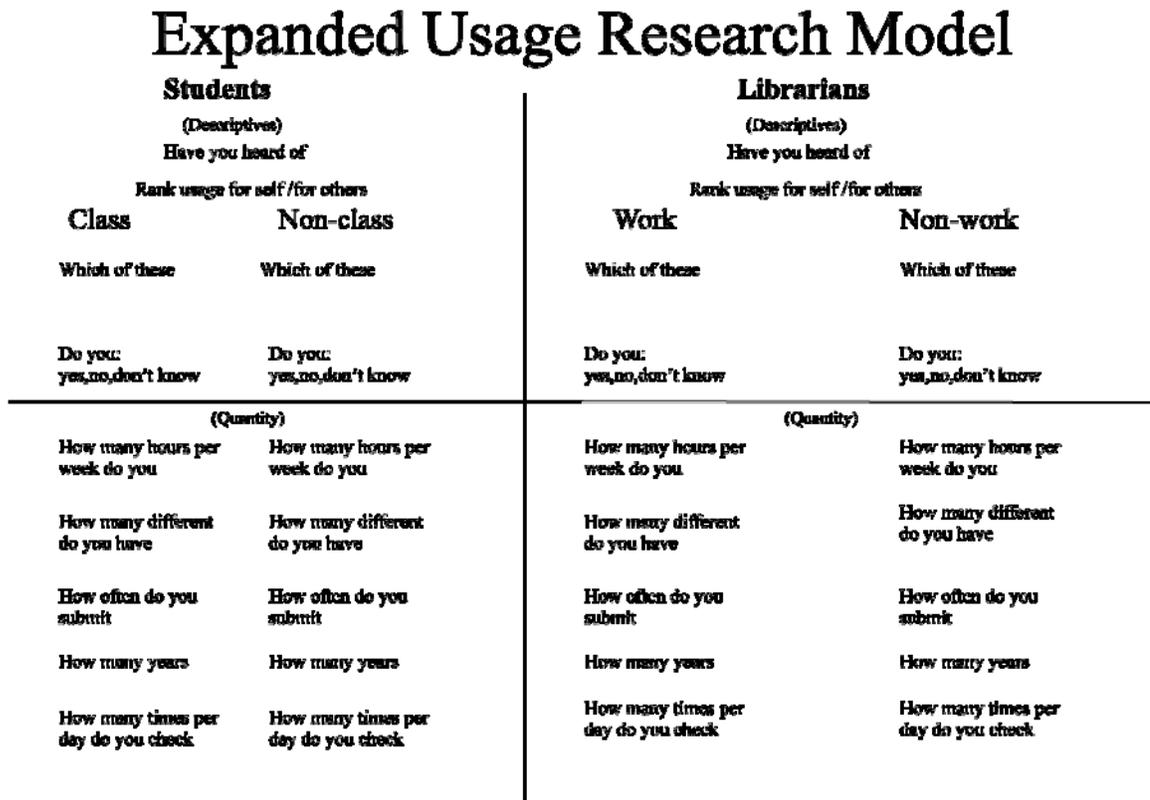


Figure 1.1 Expanded Usage Research Model

Existing Technology Self-Efficacy Scale

When constructing the instrument for measuring self-efficacy of Web 2.0 for this study, the main domain specific self-efficacy scale used as a starting point was a computer self-efficacy study which looked at the magnitude, strength, and generalizability of self-efficacy with computers (Compeau & Higgins, 1995).

Magnitude in self-efficacy of computing refers to one's belief in his or her ability to complete a certain number of computer tasks without supervision or guidance (Compeau & Higgins, 1995). For instance, one with a self-efficacy of 70 in magnitude might perceive he or she is able to operate more items without guidance, than those that rate below 70 in magnitude. With strength, the measurement goes one step beyond magnitude; the instrument examines how well one believes he or she can do tasks with a computer. The third area of measurement to extract from the learner is self-efficacy generalizability. In this measure, how well the learner believes he or she can apply a skill across to other platforms, or applications, or hardware can be examined.

Weaknesses and Strengths of Existing Technology Self-Efficacy Scale

Weaknesses

One of the weaknesses noted in Compeau's and Higgins' (1995) survey and other surveys in general is the issue of non-response bias, as late responders are sometimes equated to non-responders because both types of responders are solicited via prompting. Additionally, survey research is plagued from the beginning, even when participation is voluntary, and mail-out survey responses have at best a 75% rate of return (Dillman et al., 2001). Another issue with mail-out surveys is the lag in time between when the

survey is mailed out to the respondent, when the respondent actually receives the survey, when the respondent actually fills out the survey and mails it, and when the researchers receive the respondent's completed survey, as timeliness is helpful when modifications to survey instruments need to be made.

Strengths

Compeau and Higgins' (1995) survey was based on a literature review of five previous computer self-efficacy scales. Additionally, Compeau and Higgins did two pilot studies for testing the items for the instrument, one with a sampling of 40 respondents with the original items and constructs, and a second one with a sampling of 100 participants from the intended sampling frame to gain additional feedback and to help calculate a probable return rate on mailings of the survey instrument. To help gain an even more detailed critique of the items, Compeau and Higgins interviewed five of the respondents and inquired about apparent clarity and effectiveness of the survey. After determining a reasonable number of desired responses, Compeau and Higgins doubled this number so that when the survey was released to the intended audience, the first half of the survey responses could be used to revise the instrument so that it could be made stronger for the second half of the intended responders. High reliability (internal consistency) and validity (construct) were established through the thorough pre-development of the survey instrument.

Modifying the Computer Self-Efficacy Scale

This study will look at self-efficacy towards Web 2.0. In conducting this self-efficacy research, the researcher is actually extracting from one's mind, the level of self-efficacy towards a technology enhanced learning tool and self-efficacy towards

understanding that tool. Measuring self-efficacy is difficult, because self-efficacy must be measured through self-report (Bandura, 2001). However, the key to getting accurate data from the learner on self-reported self-efficacy is to ask the participant questions that bring out the topic of self-efficacy via several ranges of questions.

Compeau and Higgins (1995) developed an instrument to measure self-efficacy toward technology, which has been modified for this study to examine self-efficacy toward Web 2.0. Compeau and Higgins used three categories to measure self-efficacy - Magnitude, Strength, and Generalizability - and these same categories are used in the survey instrument developed for the current study with a focus on Web 2.0. For example, an original item might have stated “I believe I am able to save files to removable media,” and the revised item for this Web 2.0 study now states, “I believe I am able to post to a blog.” However, one aspect that has been added to this Web 2.0 survey instrument that was not included on the original instrument by Compeau and Higgins is the idea of understanding self-efficacy. This Web 2.0 survey instrument builds on the previous computer self-efficacy scale by trying to query from the respondent not only whether he or she can “do” a certain task, but also whether he or she “understands” the task as well.

Understanding and doing is part of the dual purpose goal of technology being a learning tool and content to learn about (Lewis, 2007). In order to avoid making incorrect assumptions about Web 2.0 self-efficacy, seven specific Web 2.0 tools were analyzed for self-efficacy (blogs, wikis, social networking, video sharing, social tagging, social bookmarking, and social cataloging). To aid in the creation of this Web 2.0 survey instrument, pilot studies were conducted three times on just one tool (blogging). Each time the initial survey instrument was tested, questions were dropped or reworded to

increase clarity, internal consistency, and content (face) validity based on input from participants, experts in the field, and statistical analysis. Statistical measures for reliability are charted through all three pilot studies in Table 4.2.

Table 4.2
Previous Pilot Study Reliability Statistics for Surveys on Blogging Self-Efficacy.

Term	N	n	I ¹	CA ¹	I ²	CA ²	Final SE Measurement
Fall 2005	191	105	22	0.74	16	0.78	2.94
Spring 2006	49	26	15	0.90	12	0.94	4.04
Fall 2006	81	35	15	0.93	15	0.932	2.63

**See Appendix B for surveys, I¹ initial item count, CA¹ initial Chronbach's alpha, I² subsequent item count, CA² subsequent Chronbach's alpha*

This study was guided by the following research question:

Can self-efficacy toward Web 2.0 be used to predict Web 2.0 usage?

To answer the research question, two studies were conducted:

Study 1: Reliability and Validity of the Web 2.0 self-efficacy scale on the entire combined sample.

Study 2: Ability of the Web 2.0 self-efficacy scale to predict Web 2.0 usage.

The Web 2.0 usage instrument did not provide scale data, therefore, Cronbach's alpha reliability could not be measured. Face validity was provided by subject matter experts in the fields of Educational Psychology, Library Science, and Instructional Technology.

To fully investigate the reliability and validity of the researcher-created Web 2.0 self-efficacy scale, the instrument was measured across two separate populations within the library science field: library school students at ALA accredited library schools and academic librarians at colleges and universities with ALA accredited library schools. It

was determined that if common factor structures and relationships were produced in the combined populations, this would contribute to the validity and reliability of the new measure.

Method

Participants

The intent of the research was to study Web 2.0 and its interaction with the library science population. Since library science is such a broad area, the focus was narrowed down to specifically concentrate on two of the main components of this area, graduate library school students, and academic librarians. It was felt that these two groups represented both the birth of library science (as noted in the students) and the practice of library science (as noted in the librarians). The researcher chose institutions whose graduate library school programs were American Library Association (ALA) accredited, so that it could be assumed that if the graduate library schools had attained ALA accreditation, the graduate library schools met certain core requirements. After discussing the topic of this research with several academic librarians and graduate library school students, it was determined that there was indeed a link between the graduate library school students and the academic libraries at the institutions. Since a link was established between the academic librarians and the graduate library school students, it was then determined that the focus for the research needed to be on academic librarians and graduate library school students at institutions where the graduate library school degree program was ALA accredited.

There were varying opinions as to exactly what an Academic Librarian was defined as, therefore, in order to be as objective as possible when creating the respondent

participation request list, a web crawling script was created to search the library sites at the institutions with ALA accredited library schools and grab all of the names and addresses and titles of individuals whose title included "librarian" in the title. Once the master list was created, the list was then culled to remove such occurrences as "assistant to the librarian" as listings such as this indicated a clerical staff, not an academic librarian. Deciding who was a graduate library school student presented less of a challenge, as graduate library school students are enrolled in classes and are identified as such by class roles of an instructor or faculty member.

Since all members of each group were given the opportunity to participate, there were generous data to interpret. Of 17,000 students possible, there were 6232 usable responses, which equates to about 37% of the total student population. There were a total of 7079 respondents who took the survey, where 847 responses were not included because of incomplete data or the respondent did not take the entire survey. The ALA graduate library schools totaled 62 at the time of this study, and confirmation to participate in the study was received from 39.

Of 3,421 librarians possible, there were 2601 usable responses, which equates to about 76% of the librarian population. There were a total of 2979 respondents who took the survey, where 378 responses were not included because of incomplete data or the respondent did not take the entire survey. Due to anonymity of responses, it was not possible to determine which academic libraries participated. Demographic data are shown in Table 4.3.

Table 4.3
Demographic Information for the Combined Population

	Academic Librarians (n=2601)		Library Students (n=6232)		Total
	%	n	%	n	n
Identity Association					
Female	72.1	1875	88.6	5521	7396
Male	25.7	669	11.4	711	1380
Trans	2.2	57	0.0	0	57
Degrees Held					
Humanities	56.2	1461	56.0	3490	4951
Social Sciences	49.9	1298	39.2	2442	3740
Combined Degree	10.5	274	11.9	740	1014
Education	16.3	424	18.8	1174	1598
Highest Degree Attained					
Doctoral	5.0	131	2.0	124	255
Master's	77.9	2027	44.5	2772	4799
Undergraduate	15.3	398	47.0	2929	3327
Degree Not Listed	1.7	45	6.5	407	452
Ages					
	<u>Academic Librarians</u>		<u>Library Students</u>		
M	43.0		33.0		
SD	12.0		9.0		
Range	22-64		23-62		
Combined Degree Itemized					
	<u>Academic Librarians</u>		<u>Library Students</u>		
	%	n	%	n	
Natural Sciences	6.7	175	6.7	420	
Business	1.1	28	5.1	315	
Engineering	0.4	11	0.1	5	
Law	1	25	0.0	0	
MD	1.3	35	0.0	0	

Materials

One part of this study included usage of Web 2.0 within Library Science. Of the more than 100 items on the researcher created Web 2.0 usage instrument, one theme of items seemed to elucidate the core scope of the study, and that theme was found in “Quantity of time spent contributing to Web 2.0 tools per week.” Therefore, only the quantity of time spent contributing to Web 2.0 items will be used in this study.

Web 2.0 self-efficacy scale: As described earlier, this Web 2.0 self-efficacy scale was adapted from Compeau’s and Higgins’ (1995) technology self-efficacy scale. Before being adapted for this study of Web 2.0 self-efficacy, Compeau’s and Higgins’ scale was first adapted just for the Web 2.0 tool of blogging. After three iterations of a pilot study with just the concept of blogging self-efficacy, the scale was then modified and expanded across six other Web 2.0 tools to create a comprehensive range of self-efficacy towards Web 2.0. Just as with the Web 2.0 usage scale, the seven Web 2.0 tools that were chosen were derived from a 4 semester survey given to graduate library school students at the beginning of each semester that asked the question, “What do you think is the most popular Web 2.0 tool?”. Respondents were given space to write in their perceptions of what the most popular Web 2.0 tool was perceived to be. Frequencies of closely matched responses were then generated and the overall top seven tools were used. One concept was added in this iteration of the self-efficacy scale, the concept of “understanding.” In the previous pilot studies of self-efficacy towards just blogging, the instrument concentrated on just the competency in the mechanics of “doing” blogging. In this newly modified self-efficacy instrument, the concept of understanding Web 2.0 has been added

to strengthen the measurement and to provide more insight into the competency of Web 2.0.

Procedure

One base survey was constructed with the general theme of self-efficacy of Web 2.0. Then, that base survey was reworded and tailored to match librarians and the students. The end result was that two separate surveys were constructed: one concentrating specifically on academic librarians and the other concentrating specifically on graduate library school students.

A master address list for the academic librarians was created by scanning the websites of the academic libraries at the institutions with ALA accredited graduate library schools. The librarians were then contacted by the researcher via a bulk email for the initial request for participation in the study, and were provided a URL by which to take the anonymous online survey.

The researcher contacted the chair of each department/school for library and information studies via email (Sample email found in Appendix D) for the initial request for participation in the study, and provided a URL by which to take the anonymous online survey. Then, the chair was asked to contact each professor actively teaching classes during that semester and asked that each professor email his or her students the URL for the online survey. Participants were informed that by clicking “submit” on the online survey, they were consenting to and agreeing to participate in the study.

Analyses

Web 2.0 Self-Efficacy Instrument Development

Analyses

Study 1: Reliability and Validity with student data

The 47 item Likert-type self-efficacy survey had a reliability coefficient using Cronbach's alpha of 0.97. All items were kept because item to total correlations were all above .300 and ranged between .400 and .847. The standard error of measurement was found to be 5.07. The means, standard deviations, and item to total correlations are presented in Table 4.4.

Table 4.4
Means, Standard Deviations, and Item to Total Correlations

	M	SD	Pearson Correlation
I understand why people Blog	4.33	0.77	0.44
I understand how to post a Blog	4.24	0.99	0.66
I'm able to post a blog	3.54	1.30	0.64
I'm able to modify functionality of a Blog	3.20	1.19	0.65
I'm able to post a blog using multiple applications	3.86	1.24	0.73
I'm able to create a blog reader account	3.56	1.16	0.69
I understand the concept of how RSS aggregators work	3.99	1.10	0.61
I'm able to subscribe to an RSS feed	3.90	1.12	0.63

Table 4.4 (Continued)
Means, Standard Deviations, and Item to Total Correlations

	M	SD	Pearson Correlation
I'm able to unsubscribe from an RSS feed	4.32	0.96	0.63
I understand why people use wikis	4.37	0.74	0.54
I understand how to edit a wiki	4.27	0.85	0.50
I'm able to edit a wiki	4.03	1.03	0.52
I'm able to modify the functionality of a wiki	3.37	1.29	0.70
I'm able to edit a wiki at multiple wiki sites	3.15	1.21	0.62
I understand the concept of how wikis can be syndicated	2.84	1.23	0.54
I understand why people use social networking sites	4.45	0.70	0.40
I understand how to edit a social networking profile	4.32	0.96	0.51
I'm able to edit a social networking profile	4.22	1.04	0.59
I'm able to modify functionality of a social networking site	4.16	1.09	0.53
I'm able to edit a profile on multiple social networking sites	3.75	1.31	0.56

Table 4.4 (Continued)
Means, Standard Deviations, and Item to Total Correlations

	M	SD	Pearson Correlation
I understand the concept of how updates to social networking sites can be syndicated	3.19	1.33	0.62
I understand why people use video sharing sites	4.36	0.69	0.53
I understand how to produce videos for video sharing sites	3.50	1.27	0.53
I can share videos on a video sharing site	3.24	1.29	0.55
I can embed a video in a webpage	3.28	1.28	0.58
I can upload a video to multiple video sharing sites	2.96	1.21	0.65
I understand the concept of how videos are syndicated	2.85	1.23	0.69
I understand why people use social tagging	3.39	1.21	0.58
I understand how to social tag	3.34	1.29	0.64
I understand how a tag clouds and tag storms work	3.11	1.19	0.71
I can tag	2.89	1.15	0.76
I can tag at multiple tagging sites	2.62	1.21	0.78
I can validate my rss syndication	2.38	1.09	0.60
I understand why people bookmark	4.00	1.06	0.63

Table 4.4 (Continued)
Means, Standard Deviations, and Item to Total Correlations

	M	SD	Pearson Correlation
I understand how to bookmark	3.57	1.32	0.78
I can use others' shared bookmarks	3.38	1.29	0.77
I am able to social bookmark	3.44	1.36	0.79
I can share my social bookmarks	3.28	1.35	0.85
I can submit bookmarks at multiple bookmarking sites	3.02	1.34	0.79
I understand bookmark syndication	2.78	1.30	0.76
I understand why people catalog	3.68	1.25	0.77
I understand the social aspect of cataloging	3.43	1.31	0.75
I can search catalogs	3.51	1.26	0.78
I can catalog	3.18	1.28	0.75
I can share my catalogs	3.20	1.28	0.82
I can catalog multiple sites	2.93	1.17	0.78
I understand catalog syndication	2.81	1.27	0.83

The survey responses were subjected to an exploratory factor analysis using a principal components analysis with a varimax, orthogonal rotation. Factor analysis is useful in providing validity evidence for the instrument. Factor analysis provides some of

the tools needed to define the underlying dimensions of variables in construct validity. Of the 47 factors, eight factors extracted with an eigenvalue of 1.00 or greater with factor one explaining 44.053% of the variance and factor nine explaining 83.533% of the remainder of the variance. After examining the principal components solution, a seven factor solution was retained, which proved the best simple structure. These loadings are above .496, which presents evidence to the construct validity for the instrument. Factor eight was removed because it only contained one item. The underlying dimensions identified by these factors are: I.) “organizational,” II.) “social networking,” III.) “syndication,” IV.) “video,” V.) “wikis,” VI.) “rss reading,” VII.) “blogging.” Factor loadings are presented in Table 4.5.

Table 4.5
Factor Loadings

	1	2	3	4	5	6	7	8
I can use others shared bookmarks	0.81	0.26	0.17	0.04	0.12	0.08	0.27	-0.16
I'm able to bookmark	0.80	0.30	0.18	0.04	0.11	0.09	0.24	-0.12
I can share bookmarks	0.78	0.24	0.26	0.12	0.10	0.13	0.29	-0.15
I understand how tagging works	0.77	0.13	0.20	-0.03	0.15	0.24	-0.28	0.10
I can search catalogs	0.77	-0.02	0.14	0.34	0.03	0.14	0.17	0.29
I understand why people bookmark	0.77	0.15	0.12	-0.14	0.16	-0.03	0.16	0.11
I understand the social aspect of cataloging	0.76	-0.02	0.13	0.25	-0.02	0.23	0.19	0.32
I understand how tag clouds and storms work	0.76	0.27	0.13	0.15	0.24	0.10	-0.25	-0.04

Table 4.5 (Continued)
Factor Loadings

	1	2	3	4	5	6	7	8
I understand how to bookmark	0.75	0.26	0.19	0.10	0.21	-0.01	0.27	-0.07
I understand why people catalog	0.73	-0.05	0.11	0.23	0.01	0.24	0.21	0.40
I can share my catalogs	0.70	0.05	0.17	0.42	0.06	0.15	0.19	0.13
I understand why people use social tagging	0.70	0.08	0.27	-0.04	0.06	0.15	-0.23	0.34
I can catalog	0.69	0.02	0.21	0.43	0.02	0.13	0.14	0.13
I can tag	0.69	0.22	0.25	0.29	0.32	0.11	-0.21	-0.16
I can submit bookmarks to multiple sites	0.65	0.18	0.32	0.22	0.19	0.10	0.25	-0.29
I can catalog at multiple sites	0.63	0.07	0.20	0.51	0.16	0.09	0.15	-0.02
I'm able to modify functionality of a social networking site	0.14	0.86	0.08	0.26	0.18	0.07	0.15	-0.01
I'm able to edit a social networking profile	0.18	0.85	0.08	0.24	0.15	0.14	0.15	0.06
I understand how to edit a social networking profile	0.11	0.83	0.09	0.17	0.15	0.27	0.12	0.03
I understand why people use social networking sites	0.06	0.70	0.00	0.00	0.13	0.18	0.08	0.40
I'm able to edit profiles in multiple social networking sites	0.37	0.62	0.06	0.26	0.24	-0.01	0.04	-0.19
I understand the concept of how updates to social networking sites can be syndicated	0.13	0.33	0.77	0.12	0.09	0.15	0.20	0.09

Table 4.5 (Continued)
Factor Loadings

	1	2	3	4	5	6	7	8
I understand the concept of how videos are syndicated	0.25	0.09	0.77	0.35	0.16	0.11	0.10	0.05
I understand the concept of how wikis can be syndicated	0.14	0.03	0.76	0.11	0.40	0.00	0.13	0.06
I understand bookmark syndication	0.53	0.03	0.71	0.13	0.01	0.18	0.19	-0.04
I can tag at multiple sites	0.49	0.06	0.70	0.16	0.21	0.20	-0.10	0.00
I can validate my syndication	0.42	-0.06	0.61	0.30	0.08	0.18	-0.11	0.02
I understand catalog syndication	0.54	0.00	0.60	0.34	0.08	0.16	0.17	0.06
I can video share	0.12	0.28	0.17	0.82	0.13	0.02	0.11	-0.02
I can upload videos to multiple sites	0.21	0.17	0.29	0.74	0.22	0.14	0.07	0.06
I can embed video in a web page	0.23	0.23	0.25	0.69	0.13	0.23	-0.04	0.05
I understand how to produce videos	0.09	0.37	0.14	0.66	0.04	0.05	0.20	0.11
I am able to edit a wiki	0.13	0.19	0.09	0.21	0.83	0.22	0.02	0.06
I understand how to edit a wiki	0.07	0.30	0.10	0.11	0.79	0.25	0.08	0.22
I am able to edit a wiki at multiple sites	0.31	0.18	0.34	0.04	0.72	-0.08	0.15	-0.14
I am able to modify functionality of a wiki	0.29	0.14	0.37	0.13	0.69	0.09	0.23	-0.05
I understand why people use wikis	0.09	0.42	0.07	0.15	0.52	0.12	0.08	0.44

Table 4.5 (Continued)
Factor Loadings

	1	2	3	4	5	6	7	8
I am able to subscribe to rss feeds	0.26	0.27	0.16	0.08	0.20	0.83	0.10	0.04
I am able to unsubscribe from rss feeds	0.27	0.22	0.11	0.14	0.22	0.81	0.12	-0.03
I understand rss feeds	0.15	0.18	0.34	0.20	0.04	0.68	0.15	0.22
I am able to post using multiple blogging sites	0.38	0.24	0.29	0.22	0.14	0.15	0.62	-0.04
I am able to modify a blog	0.27	0.36	0.17	0.23	0.25	0.16	0.59	-0.02
I am able to post a blog	0.23	0.44	0.13	0.12	0.22	0.25	0.56	0.19
I am able to create blog reader account	0.29	0.41	0.17	0.15	0.20	0.37	0.50	0.01
I understand why people video share	0.20	0.45	0.13	0.17	0.17	0.08	-0.04	0.58

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations

Study 2: Hierarchical Linear Regression analysis to discover if self-efficacy toward Web 2.0 can predict Web 2.0 Usage.

In order to determine if there was a correlation between self-efficacy and usage, a hierarchical linear regression was run with each Web 2.0 tool “hours per week” usage item as the dependent variable and the self-efficacy total for each Web 2.0 factor theme as the independent variable in model one. In model two, gender (male or female), highest degree (undergraduate or graduate), and classification (librarian or student). The items were paired; for example, Web 2.0 organizational self-efficacy items were paired with blogging usage items. The usage instrument was very detailed in that it queried the respondents’ usage at school and away from school. However, self-efficacy is tied to the person, not to the location. Therefore, the work/school “hours per week” usage and the non-school/non-work “hours per week” usage items were added together to give a sum total for usage per week for an individual. This resulted in 7 dependent variable items and 7 self-efficacy tool totals (independent variables) over two models, for a total of 49 dual model hierarchical linear regressions. In order to control for Type 1 error and to create a more stringent p value, the standard p value of .01 was divided by 10 (number of tests run in MANOVA) to arrive at the new p value of .001. All significance was gauged against the .001 p value, which is also the most stringent p value that SPSS can report.

All regressions were significant ($\alpha = .001$) $p < .001$; and all betas showed significance ($\alpha = .001$) $p < .001$. In all 49 regressions, R squared values increased in model two, the model that included the demographic groupings of gender (male or female), highest degree (undergraduate or graduate), and classification (librarian or student), therefore model two was chosen as the most robust model. According to

McCabe and McCabe (1980), the closer the R squared value is to 1, the better the fit and the greater the assurance of predictability. Model two R squared values are shown in

Table 4.6.

Table 4.6
Model Two R Squared Values for Regressions

Regression	R ²
Regressing Blog usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.11
Regressing Wiki usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.05
Regressing Social Networking usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.07
Regressing Video Sharing usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.08

Table 4.6 (Continued)
Model Two R Squared Values for Regressions

Regression	R ²
Regressing Social Tagging usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.10
Regressing Social Bookmarking usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.07
Regressing Social Cataloging usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.12
Regressing Blog usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.16
Regressing Wiki usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.08
Regressing Social Networking usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.25
Regressing Video Sharing usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.08
Regressing Social Tagging usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.09

Table 4.6 (Continued)
Model Two R Squared Values for Regressions

Regression	R ²
Regressing Social Bookmarking usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.11
Regressing Social Cataloging usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.05
Regressing Blog usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.13
Regressing Wiki usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.09
Regressing Social Networking usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.02
Regressing Video Sharing usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.08
Regressing Social Tagging usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.11
Regressing Social Bookmarking usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.11

Table 4.6 (Continued)
Model Two R Squared Values for Regressions

Regression	R ²
Regressing Social Cataloging usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.05
Regressing Blog usage on Web 2.0 Video Self-Efficacy and common demographics	0.24
Regressing Wiki usage on Web 2.0 Video Self-Efficacy and common demographics	0.05
Regressing Social Networking usage on Web 2.0 Video Self-Efficacy and common demographics	0.12
Regressing Video Sharing usage on Web 2.0 Video Self-Efficacy and common demographics	0.10
Regressing Social Tagging usage on Web 2.0 Video Self-Efficacy and common demographics	0.09
Regressing Social Bookmarking usage on Web 2.0 Video Self-Efficacy and common demographics	0.08
Regressing Social Cataloging usage on Web 2.0 Video Self-Efficacy and common demographics	0.09
Regressing Blog usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.11

Table 4.6 (Continued)
Model Two R Squared Values for Regressions

Regression	R ²
Regressing Wiki usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.18
Regressing Social Networking usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.12
Regressing Video Sharing usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.08
Regressing Social Tagging usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.10
Regressing Social Bookmarking usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.14
Regressing Social Cataloging usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.04
Regressing Blog usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.08
Regressing Wiki usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.07
Regressing Social Networking usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.05

Table 4.6 (Continued)
Model Two R Squared Values for Regressions

Regression	R ²
Regressing Video Sharing usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.07
Regressing Social Tagging usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.09
Regressing Social Bookmarking usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.11
Regressing Social Cataloging usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.07
Regressing Blog usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.23
Regressing Wiki usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.07
Regressing Social Networking usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.10
Regressing Video Sharing usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.07

Table 4.6 (Continued)
Model Two R Squared Values for Regressions

Regression	R ²
Regressing Social Tagging usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.09
Regressing Social Bookmarking usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.13
Regressing Social Cataloging usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.08

By utilizing a hierarchical regression, specifically highlighted in model two, demographic correlations can be ascertained. Each regression contained three correlations (gender, highest degree, and classification). The correlations are as shown in Table 4.7. Regression results are available in Appendix E.

Table 4.7
Correlations for Demographics in Model Two

Corresponding Regression	Gender	Highest Degree	Classification
Regressing Blog usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.19	0.25	0.52
Regressing Wiki usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.06	0.18	0.55
Regressing Social Networking usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.64	-0.03	0.02

Table 4.7 (Continued)
Correlations for Demographics in Model Two

Corresponding Regression	Gender	Highest Degree	Classification
Regressing Video Sharing usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.14	-0.43	0.07
Regressing Social Tagging usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.14	-0.02	0.54
Regressing Social Bookmarking usage on Web 2.0 Organizational Self-Efficacy and common demographic	0.41	-0.30	0.62
Regressing Social Cataloging usage on Web 2.0 Organizational Self-Efficacy and common demographics	0.08	-0.08	0.14
Regressing Blog usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.24	-0.4	0.56
Regressing Wiki usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.08	0.11	0.56
Regressing Social Networking usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.71	-0.20	0.16
Regressing Video Sharing usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.14	-0.44	0.06
Regressing Social Tagging usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.15	-0.05	0.54

Table 4.7 (Continued)
Correlations for Demographics in Model Two

Corresponding Regression	Corresponding Regression	Highest Degree	Classification
Regressing Social Bookmarking usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.44	-0.01	0.57
Regressing Social Cataloging usage on Web 2.0 Social Networking Self-Efficacy and common demographics	0.06	-0.03	0.11
Regressing Blog usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.20	-0.16	0.48
Regressing Wiki usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.06	-0.16	0.54
Regressing Social Networking usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.64	-0.05	-0.05
Regressing Video Sharing usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.14	-0.44	0.07
Regressing Social Tagging usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.15	-0.02	0.58
Regressing Social Bookmarking usage on Web 2.0 Syndication Self-Efficacy and common demographics	0.41	0.10	0.52

Table 4.7 (Continued)
Correlations for Demographics in Model Two

Corresponding Regression	Corresponding Regression	Highest Degree	Classification
Regressing Social Cataloging usage on Web 2.0 Syndication Self-Efficacy and common demographics	-0.19	-0.01	0.09
Regressing Blog usage on Web 2.0 Video Self-Efficacy and common demographics	0.44	-0.05,	0.58
Regressing Wiki usage on Web 2.0 Video Self-Efficacy and common demographics	0.09	-0.12	0.54
Regressing Social Networking usage on Web 2.0 Video Self-Efficacy and common demographics	0.84	0.21	0.08
Regressing Video Sharing usage on Web 2.0 Video Self-Efficacy and common demographics	0.19	0.40	0.10
Regressing Social Tagging usage on Web 2.0 Video Self-Efficacy and common demographics	0.18	-0.06	0.53
Regressing Social Bookmarking usage on Web 2.0 Video Self-Efficacy and common demographics	0.52	-0.00	0.54
Regressing Social Cataloging usage on Web 2.0 Video Self-Efficacy and common demographics	0.01	-0.07	0.13
Regressing Blog usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.10	-0.16	0.49

Table 4.7 (Continued)
Correlations for Demographics in Model Two

Corresponding Regression	Corresponding Regression	Highest Degree	Classification
Regressing Wiki usage on Web 2.0 Wiki Self-Efficacy and common demographics	-0.04	0.18	0.60
Regressing Social Networking usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.51	-0.03	0.04
Regressing Video Sharing usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.14	-0.44	0.07
Regressing Social Tagging usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.12	-0.02	0.53
Regressing Social Bookmarking usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.30	-0.10	0.56
Regressing Social Cataloging usage on Web 2.0 Wiki Self-Efficacy and common demographics	0.11	-0.00	0.10
Regressing Blog usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.21	-0.17	0.39
Regressing Wiki usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.06	-0.14	0.50
Regressing Social Networking usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.63	-0.06	-0.07
Regressing Video Sharing usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.12	-0.39	0.08

Table 4.7 (Continued)
Correlations for Demographics in Model Two

Corresponding Regression	Corresponding Regression	Highest Degree	Classification
Regressing Social Tagging usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.15	-0.02	0.50
Regressing Social Bookmarking usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.42	-0.11	0.44
Regressing Social Cataloging usage on Web 2.0 RSS Reading Self-Efficacy and common demographics	0.07	-0.02	0.05
Regressing Blog usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.14	-0.24	0.56
Regressing Wiki usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.05	-0.17	0.55
Regressing Social Networking usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.60	-0.03	0.05
Regressing Video Sharing usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.14	-0.43	0.07
Regressing Social Tagging usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.14	0.01	0.52
Regressing Social Bookmarking usage on Web 2.0 Blogging Self-Efficacy and common demographics	0.37	-0.15	0.56
Regressing Social Cataloging usage on Web 2.0 Blogging Self-Efficacy and common demographics	-0.10	-0.04	0.02

Discussion

Even with a high reliability and validity rating, the standard error of measurement for the self-efficacy instrument was undesirably high. One explanation for this high error rate could be the notion that each of the self-efficacy sections (blogging, etc.) had two main strands (doing and understanding) and within each strand were three threads: magnitude, strength, and generalizability. Possibly, the diverging self-efficacy items may have caused the large error rate. Factor analysis results produced some similarity between the seven popular Web 2.0 tools and the themes generated by factor analysis, as seen by the connections of the similar themes in Figure 4.2.

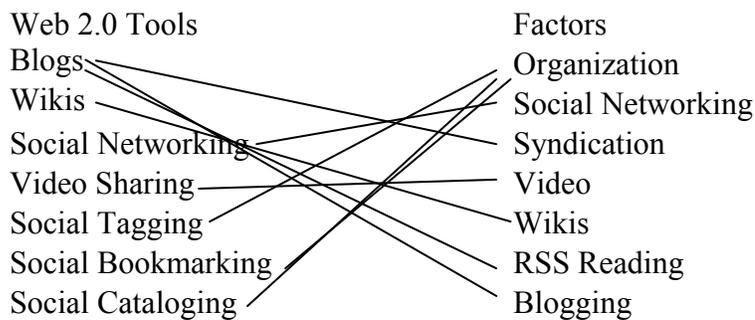


Figure 4.2 Factor Analysis Similarities

To address the overarching research question for this study “Can Web 2.0 Self-Efficacy be used to predict Web 2.0 Usage?”, 49 dual model hierarchical linear regressions were performed. Several themes were revealed within these regressions. For the most part, R squared values (used to gauge predictability) were at or below .25 or 25%. The following regressions showed a high R squared value: Social Networking Self-Efficacy predicting Social Networking Usage ($R^2=.25$), Video Self-Efficacy predicting Blog Usage ($R^2=.24$), Blog Self-Efficacy predicting Blog Usage ($R^2=.23$). Social

Networking Self-Efficacy predicting Social Networking usage and Blog Self-Efficacy predicting Blog usage makes sense as each of these combinations have similar themes. What is interesting to note is that Video Self-Efficacy predicts Blog Usage. This combination does seem puzzling. One possible rationale for this high prediction value could be attributed to the fact that Blogging and Video Sharing are direct outlets for Self-Expression within Web 2.0 (Hodgkinson, 2007). According to McCabe and McCabe (1980), the closer the R squared value is to 1, the better the fit and the greater the assurance of predictability. Even though the R squared values were not above .5 or 50%, examining the practical significance of the R squared values that did occur sheds new light on these results. For example, if self-efficacy was matched with usage in a learning environment and self-efficacy raised usage 25%, this could be the difference between a letter grade of “C” and a letter grade of an “A.” This preliminary finding coupled with future motivational research could prove to be very valuable for the educational community.

When examining the results for the correlations of the demographics, three themes emerged. The demographic “Classification” (librarian or student) tended to have the highest correlation, “Highest Degree” (undergraduate or graduate) tended to have a negative correlation, and “Gender” (male or female) tended to have a low or negative correlation, except for the instance of Social Networking Self-Efficacy predicting Social Networking usage, where Gender had a correlation of .71. Classification (student or librarian) appears to be highly correlated with most predictions. This reveals that as the classification shifts from student to librarian, the predictive capability of the self-efficacy factor increases as well. Highest degree (undergraduate or graduate), appears to be low

or in most cases negatively correlated with most predictions. This reveals that as the highest degree shifts from graduate to undergraduate, the predictive capability of the self-efficacy factor decreases. In most cases, gender (male or female) had low correlations with predictions. This reveals that as the gender shifts from female to male, the predictive capability of the self-efficacy increases. This study benefits from the hierarchical regression not only because it helps raise the R squared value of predictability, but also because it helps shed light on the fact that demographics do play a role in this research. The question remains for future researchers who will hopefully benefit from this research as to why demographics are so tightly related to self-efficacy, usage, and Web 2.0. Future research interests into whether this regression formula can predict Web 3.0 usage would greatly benefit not only the library science practitioners, but also the curriculum of graduate library science students.

REFERENCES

- Abram, S. (2007). *Web 2.0, library 2.0, and librarian 2.0: Preparing for the 2.0 world*. sirsidynix OneSource. Retrieved October 19, from http://www.imakenews.com/sirsi/e_article000505688.cfm
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997). Self-efficacy. [Article]. *Harvard Mental Health Letter*, 13(9), 4.
- Bandura, A. (2001). *Guide for constructing self-efficacy scales*. (Revised 2006). Atlanta, GA: Emory Univesity.
- Bandura, A., Caprara, G. V., Barbaranelli, C., Gerbino, M., & Pastorelli, C. (2003). Role of Affective Self-Regulatory Efficacy in Diverse Spheres of Psychosocial Functioning. [Article]. *Child Development*, 74(3), 769-782.
- Barron, D. D., Daniel, E. H., Harris, C. L., Olsgaard, J. K., Olsgaard, J. N., Saye, J. D., et al. (2006). *ALISE: Library and Information Science Education Statistical Report 2006*. Oak Ridge, TN.
- Carmines, E., & Zeller, R. (1979). *Reliability and validity assessment*. London: Sage .
- Clyde, L. A. (2005). Educational Blogging. [Feature Article]. *Teacher Librarian*, 32(3), 43-45.
- Compeau, D. R. Higgins., Christopher A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189-212
- Davis, M., Wilson, C. S., & Horn, A. (2005). Informing decision-making in libraries: Informetric research as input to LIS education and practice. [Feature]. *Australian Academic & Research Libraries*, 36(4), 195-213.
- Dillman, D. A., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J., et al. (2001). Response rate and measurement differences in mixed-mode surveys using mail, telephone, interactive voice response (IVR) and the Internet. *Social Science Research, In Press, Corrected Proof*.
- Farrelly, M. G. (2007). Bother the librarians! [Feature]. *Public Libraries*, 46(1), 36-38.
- Hall-Ellis, S. D. (2006). Cataloging Electronic Resources and Metadata: Employers' Expectations as Reflected in American Libraries and AutoCAT, 2000-2005. [Feature Article]. *Journal of Education for Library and Information Science*, 47(1), 38-51.
- Horrocks, I. A. N. (2008). Ontologies and the Semantic Web. *Communications of the ACM*, 51(12), 58-67.
- Jankowska, M. A. (2004). Identifying university professors' information needs in the challenging environment of information and communication technologies. [Feature Article]. *The Journal of Academic Librarianship*, 30(1), 51-66.
- Jankowska, M. A. (2007). RE: Maria Anna may I use your survey as a contribution to my PhD research. In C. Davis (Ed.).

- Laney, J. D. (1993). Experiential versus experience-based learning and instruction. *Journal of Educational Research*, 86, 228-236.
- Lewis, D. W. (2007). A strategy for academic libraries in the first quarter of the 21st century. [Feature]. *College & Research Libraries*, 68(5), 418-434.
- Markey, K. (2004). Current Educational Trends in the Information and Library Science Curriculum. [Feature Article]. *Journal of Education for Library and Information Science*, 45(4), 317-339.
- McKinney, R. D. (2006). Draft proposed ALA core competencies compared to ALA-accredited, candidate, and precandidate program curricula: A preliminary analysis. [Feature Article]. *Journal of Education for Library and Information Science*, 47(1), 52-77.
- Nicotera, C. L. r. (2000). Writing and updating technology plans (Book Review), *The Journal of Academic Librarianship* v. 26 no. 4 (July 2000) p. 293.
- Ralph, J., & Olsen, S. (2007). Podcasting as an educational building block in academic libraries. [Feature]. *Australian Academic & Research Libraries*, 38(4), 270-279.
- Van Fleet, C., & Wallace, D. P. (2002). The I-word: Semantics and Substance in Library and Information Studies Education. [Feature Article]. *Reference & User Services Quarterly*, 42(2), 104-109.
- Varlejs, J. (2003). Professional Competencies for the Digital Age: What Library Schools Are Doing to Prepare Special Librarians. [Feature Article]. *Education Libraries*, 26(1), 16-18.

CHAPTER 5

CONCLUSION

The concept of Web 2.0 has made its way into several arenas and several modes of delivery and usage. However, the two questions that still remain that previous research did not answer were: “What exactly is Web 2.0?”, and “Could Web 2.0 be useful to Library Science?” This dissertation sought to answer these two overarching questions about Web 2.0, by extracting from graduate library school students and academic librarians perceptions of definition, frequency of usage, and self-efficacy toward Web 2.0. The rationale that guided this study was from Lewis (2007) and suggests that library science can utilize technology for tools of application, tools to help learn, and tools to learn about.

Commentary on Instruments

Web 2.0 Definition: The survey instruments developed for this dissertation were part researcher created and part modification of existing survey instruments. Further development of the Web 2.0 definition instrument is necessary before an understanding of exactly how to measure the definition of Web 2.0 is accomplished. Previous surveys that asked students to “fill in the blank” with how they defined Web 2.0 created a large string of responses, however, if truncated or generalized, several commonalities and thoughts did arise.

However, what was hoped to be gained from this Web 2.0 definition study was a clearer understanding of how people agreed with the definitions of Web 2.0 that were provided. The notion of how to define Web 2.0 is still as unclear as when this study first began, both in measurement, and in general public opinion. Although there were no

between subject significant differences for definition of Web 2.0, there was significance in between group effects for classification (librarian or student) and highest degree (undergraduate or graduate). Future research would need to be conducted to see if this is due to a general consensus for Web 2.0 definition agreement, or if the instrument is not gauging definition properly.

As for usage, many lessons were learned in the development of the usage scale. One such issue was a technical problem with the video sharing portion of the survey, as one of the items had a non-functioning response button. This issue was corrected almost immediately, however, the first 19 respondents had to be rejected because of incomplete data (4 student respondents and 15 librarian respondents). An important demographic option “MLIS degree” was not included in the survey, which made respondents either choose the general term “Masters degree” or choose “other” and then fill in the blank for MLIS. Although this had no catastrophic damage to the integrity of the research, when surveying librarians in the future, it will be duly noted to include “MLIS degree” as an option in the demographics section. When examining the high frequency of selection of the choice “none of the items listed” for several of the items, one begins to wonder whether the respondents understood the wording of the choice. In other words, one is only to assume that when one selects “none of the choices listed” as an option, that is what he or she means, however, since the most popular choices were listed, one could argue that there was some confusion on whether the choice was actually interpreted as “none,” meaning, the respondent did not use the tool at all. Since there were no follow up interviews with respondents, there is no way of knowing. Bulk emails were sent to the academic librarians at the institutions with ALA accredited library schools, and one

institution flagged these email requests for survey participation as spam. Some time and participation were lost while the researcher contacted the director at the library of that institution to explain the legitimacy of the survey research. The length of the survey instrument seemed to illicit fatigue among respondents as it appeared as though the more questions encountered by the respondent, the less detail was provided in responses.

In general, the library science arena is using Web 2.0, and more specifically, is using Web 2.0 more away from work/school. Similarly, when examining the differences between librarians and students with regard to Web 2.0 usage, it becomes apparent that the demographics are tightly woven within the fabric of the responses. Making blanket statements of differences between librarians and students proved to not be applicable.

One question that surfaced as the data were being analyzed, was the question of “why did each group use Web 2.0 as it did?”. Although this question was not answered by this study, this study could be a good foundation for a future understanding of why librarians and library students use Web 2.0 as they do.

Along with the reasonable evidence that indicated that self-efficacy could predict Web 2.0 usage, gaining an understanding of individuals’ self-efficacy towards Web 2.0 may be useful to other research related to overcoming technology resistance. Self-efficacy is said to be a predictor of certain outcomes, and further research using this self-efficacy knowledge could help to understand how self-efficacy can predict other aspects of Web 2.0 behavior. Additionally, it would be interesting to determine if combining this self efficacy research with the expectancy-value theory of motivation by Eccles and Wigfield (Eccles & Wigfield, 2002) might create a better means for predicting not only behavior outcome, but possibly even motivation toward usage of Web 2.0.

In Summary

Based on the widespread usage of Web 2.0 by the library science community as stated in this dissertation, it could be presumed that Web 2.0 is a viable and relevant topic not only for library science education as a topic of content and a learning tool, but also as a tool for practice in the librarian profession. However, there are still many other factors to consider when choosing something as a successful and integral part of a field, so more research should be conducted to determine how relevant Web 2.0 is now and will be in the future for library science. The large response rate for this study allowed the effect size and power of the study to be substantial enough to allow this research to be used as a stepping stone for more Web 2.0 research. Additionally, with such a large data-set, there are other possible avenues of research to explore within Web 2.0 and librarianship that were not investigated in this research.

Future Research

When examining what was sought from the research in this study, three main points appear to be addressed: a.) How competent does the population feel when using the selected Web 2.0 tools?, b.) Of the definitions provided, how much does the population agree with each of the definitions?, c.) How often does one use a selected Web 2.0 tool? However, after investigating these three main areas of research, even more questions have arisen within the area of library science and Web 2.0. One area of research could be to investigate why the population uses certain Web 2.0 tools. This area of inquiry would not want to be confused with “what is the population using,” as finding out what the population is using would be a stepping stone to then finding out why the

population is using such Web 2.0 tools. One of the limitations in this research was the fact that “what was being used” had already been determined by pilot studies, however, it would be interesting to see how different the results would be if the research was allowed to be more open ended such that respondents could explain freely what Web 2.0 tools he or she uses, how the Web 2.0 tools are used, and why the Web 2.0 tools are used the way they are used. Additionally, one perception that was not ascertained in this research was examining the role that graduate library school professors play in the mix of training students to become librarians and how they incorporate Web 2.0 into curriculum and learning.

In this study, the location of “in-class/work” or “outside of class/work” was included to determine where students used Web 2.0, however, one question now arises that was not covered in this dissertation research, which is “Does using Web 2.0 tools in the classroom help or increase learning outcomes?” and if so, “Why?”. From this research we begin to see the quantities of inclusion of the certain Web 2.0 tools into the librarians work and non-work, but one question that was not answered during this research endeavor was the question of, “Is Web 2.0 making more of a contribution to the library profession or is it taking away from the library profession?”. In this research, competency toward Web 2.0 was evaluated, however, what was not gathered were data on how the population values Web 2.0, as it would be interesting to know if students are only using Web 2.0 because of a requirement for class, or possibly librarians feel Web 2.0 is a requirement for the job role as well. As stated previously, if expectance and value of Web 2.0 could be derived, then a better understanding of what motivates individuals to use Web 2.0 could be reported. Additionally, one topic of research that

would provide even more overall impact to the arena of Web 2.0 and library science is a better understanding of what is the initiator of change in the library science field. For example, does the library education field dictate what is of importance to the library science profession, or does the library science profession dictate what is of importance to library education?

There are probably even more questions that could arise as Web 2.0 matures and grows and so does library science. Web 2.0 is already having to share the limelight with its successor, Web 3.0. According to Horrocks (2008), Web 3.0 is more commonly referred to as the semantic web. Library science holds a dear relationship with the concept of semantics because semantics are based on ontologies, which are basically strings of descriptors that help organize and tag information. Horrocks states that Web 2.0 will contribute to these descriptors and help pave the way for Web 3.0. One thing that is clear about both Web 2.0 and library science: both are continually changing and will present researchers with many opportunities for scholarly study.

As with all scholarly research, this dissertation represents a snapshot of data at a point in time, Spring 2008, to be specific. As time marches on, newer technologies will appear, which will be followed by newer research of that technology. It would be nice if scholarly research could keep up with the rapid pace of changing technology, for one of the things that has been frustrating about doing this research is the fact that by the time this research is placed in the hands of other researchers, it may already be outdated and unhelpful. For example, when this research was first started, Web 2.0 was still a novel idea. At the close of this research in 2009, Web 2.0 has already infiltrated many websites providing not only ease of use, but increased functionality. One thing is for certain,

however, one cannot map a path for the future, unless one knows where he or she stands today. That is what this research aims to do, paint a picture of where the library science community is today with current technology of Web 2.0 so that the future technology, whatever it may be, can be set as a destination.

REFERENCES

- Abram, S. (2007, Friday, October 19, 2007). Web 2.0, Library 2.0, and Librarian 2.0: Preparing for the 2.0 World. *SirsiDynix OneSource*, from http://www.imakenews.com/sirsi/e_article000505688.cfm
- Alexander, B. (2006). Web 2.0: A New Wave of Innovation for Teaching and Learning? *E-Learning*, 41(2), 32.
- Ankolekar, A., Krötzsch, M., Tran, T., & Vrandecic, D. (2008). The two cultures: Mashing up Web 2.0 and the Semantic Web. *Web Semantics: Science, Services and Agents on the World Wide Web*, 6(1), 70-75.
- Ansari, M. N. (2007). Librarian as Cybrarian, *Pakistan Library & Information Science Journal v. 38 no. 2 (June 2007) p. 24-31*.
- Appleton, M. (2003). The New Review of Libraries and Lifelong Learning, *Australian Academic & Research Libraries v. 34 no. 2 (June 2003) p. 168*.
- Bailin, A., & Pena, A. (2007). Online Library Tutorials, Narratives, and Scripts. [Feature Article]. *The Journal of Academic Librarianship*, 33(1), 106-117.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997). Self-efficacy. [Article]. *Harvard Mental Health Letter*, 13(9), 4.
- Bandura, A. (2001). Guide for constructing self-efficacy scales(Revised). 2006
- Bandura, A., Caprara, G. V., Barbaranelli, C., Gerbino, M., & Pastorelli, C. (2003). Role of Affective Self-Regulatory Efficacy in Diverse Spheres of Psychosocial Functioning. [Article]. *Child Development*, 74(3), 769-782.
- Barron, D. D., Daniel, E. H., Harris, C. L., Olsgaard, J. K., Olsgaard, J. N., Saye, J. D., et al. (2006). *ALISE: Library and Information Science Education Statistical Report 2006*. Oak Ridge, TN.
- Bausch, S., & Han, L. (2006). *SOCIAL NETWORKING SITES GROW 47 PERCENT, YEAR OVER YEAR, REACHING 45 PERCENT OF WEB USERS, ACCORDING TO NIELSEN//NETRATINGS: Successful Sites Drive High Visitor Retention Rates*: NetRatings, Inc.
- Blumenstein, L. (2007). On September 10, Librarians Will Be a Presence on Answer Sites. *Library Journal*.
- Bove, F. J. (2005). Catalogablog--<http://catalogablog.blogspot.com/>. [Article]. *Technical Services Quarterly*, 23(1), 101-103.
- Carmines, E., & Zeller, R. (1979). *Reliability and Validity Assessment*. London: Sage Publications.
- Clyde, L. A. (2005). Educational Blogging. [Feature Article]. *Teacher Librarian*, 32(3), 43-45.
- Cohen, S. M. (2004). Online Social Networking Tools. [Feature Article]. *Public Libraries*, 43(5), 271-272.
- Cohen, S. M. (2006). The Next Big "Library Thing". [Feature Article]. *Public Libraries*, 45(2), 33-35.
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189-212.
- Coombs, K. A. (2007, January 2007). Building a Library Web Site on the Pillars of Web 2.0. *Computers in Libraries*.

- David, E. M., & Martin, R. (2006). *Web 2.0: hypertext by any other name?* Paper presented at the Proceedings of the seventeenth conference on Hypertext and hypermedia.
- Davis, M., Wilson, C. S., & Horn, A. (2005). Informing Decision-Making in Libraries: Informetric Research as Input to LIS Education and Practice. [Feature]. *Australian Academic & Research Libraries*, 36(4), 195-213.
- DeTure, M. (2004). Cognitive Style and Self-Efficacy: Predicting Student Success in Online Distance Education. *American Journal of Distance Education*, 18(1), 21-38.
- Dillman, D. A., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J., et al. (2001). Response rate and measurement differences in mixed-mode surveys using mail, telephone, interactive voice response (IVR) and the Internet. *Social Science Research, In Press, Corrected Proof*.
- Eccles, J. S., & Wigfield, A. (2002). MOTIVATIONAL BELIEFS, VALUES, AND GOALS. *Annual Review of Psychology*, 53(1).
- Elliott, J. (2007). Academic Libraries and Extracurricular Reading Promotion. [Feature Article]. *Reference & User Services Quarterly*, 46(3), 34-43.
- Farrelly, M. G. (2007). Bother the Librarians! [Feature]. *Public Libraries*, 46(1), 36-38.
- Ferdig, R. E., & Trammell, K. D. (2004). Content Delivery in the 'Blogsphere'. [Article]. *THE Journal*, 31(7), 12-20.
- Fidishun, D. (2001). People servers vs. information providers: the impact of service orientation on technology training. [Feature Article]. *Information Technology and Libraries*, 20(1), 29-33.
- Foley, M. (2002). Instant messaging reference in an academic library: a case study. [Feature Article]. *College & Research Libraries*, 63(1), 36-45.
- Franklin, B., & Plum, T. (2006). Successful Web Survey Methodologies for Measuring the Impact of Networked Electronic Services (MINES for Libraries). [Feature]. *IFLA Journal*, 32(1), 28-40.
- Gerry. (2007, June 6, 2007). LibGuides: The Web 2.0 Library Knowledge Sharing System (in Facebook). *Friends: Social Networking Sites for Engaged Library Services*, from <http://onlinesocialnetworks.blogspot.com/2007/06/libguides-web-20-library-knowledge.html>
- Hall-Ellis, S. D. (2006). Cataloging Electronic Resources and Metadata: Employers' Expectations as Reflected in American Libraries and AutoCAT, 2000-2005. [Feature Article]. *Journal of Education for Library and Information Science*, 47(1), 38-51.
- Harboe-Ree, C. (2007). Just Advanced Librarianship: The Role of Academic Libraries as Publishers. [Feature Article]. *Australian Academic & Research Libraries*, 38(1), 15-25.
- Harer, J. B., & Cole, B. R. (2005). The Importance of the Stakeholder in Performance Measurement: Critical Processes and Performance Measures for Assessing and Improving Academic Library Services and Programs. [Feature Article]. *College & Research Libraries*, 66(2), 149-170.
- Hermann, J., Painter, J., & Kroski, E. (2007, August 14, 2007). 2.0 Show and Tell. from <http://librarycampnyc.wikispaces.com/2.0+Show+and+Tell>
- Hess, F. M., Rotherham, A. J., & Walsh, K. B. (2004). *A qualified teacher in every classroom? : appraising old answers and new ideas*. Cambridge, MA: Harvard Education Press.
- Hildreth, S. (2007). Engaging Your Community: A Strategy for Relevance in the Twenty-First Century. [Feature Article]. *Public Libraries*, 46(3), 7-9.

- Hodgkinson, M. (2007). omg web 2.0 is kewl. *Journalology: Science publishing trends, ethics, peer review, and open access*, from <http://journalology.blogspot.com/2007/06/omg-web-20-is-kewl.html>
- Horrocks, I. A. N. (2008). Ontologies and the Semantic Web. *Communications of the ACM*, 51(12), 58-67.
- Huffman, K. (2006). Web 2.0: Beyond the Concept: Practical Ways to Implement RSS, Podcasts, and Wikis. [Feature Article]. *Education Libraries*, 29(1), 12-19.
- Jaeger, P. T., & Franklin, R. E. (2007). The Virtuous Circle: Increasing Diversity in LIS Faculties to Create More Inclusive Library Services and Outreach. [Feature Article]. *Education Libraries*, 30(1), 20-26.
- Jankowska, M. A. (2004). Identifying University Professors' Information Needs in the Challenging Environment of Information and Communication Technologies. [Feature Article]. *The Journal of Academic Librarianship*, 30(1), 51-66.
- Jankowska, M. A. (2007). RE: Maria Anna may I use your survey as a contribution to my PhD research. In C. Davis (Ed.).
- Jones, E. A., ERIC Clearinghouse on Higher Education., Association for the Study of Higher Education., & George Washington University. Graduate School of Education and Human Development. (2002). *Transforming the curriculum : preparing students for a changing world*. San Francisco, CA: Jossey-Bass.
- Kajewski, M. A. (2006). Emerging Technologies Changing Public Library Service Delivery Models. [Feature Article]. *Australasian Public Libraries and Information Services*, 19(4), 157-163.
- Kraemer, E. W., Lombardo, S. V., & Lepkowski, F. J. (2007). The Librarian, the Machine, or a Little of Both: A Comparative Study of Three Information Literacy Pedagogies at Oakland University. *College & Research Libraries v. 68 no. 4 (July 2007) p. 330-42*.
- Laney, J. D. (1993). Experiential versus experience-based learning and instruction. *Journal of Educational Research*, 86, 228-236.
- Lewis, D. W. (2007). A Strategy for Academic Libraries in the First Quarter of the 21st Century. [Feature]. *College & Research Libraries*, 68(5), 418-434.
- Lim, S. (2007). Library Informational Technology Workers: Their Sense of Belonging, Role, Job Autonomy, and Job Satisfaction. [Feature Article]. *The Journal of Academic Librarianship*, 33(4), 492-500.
- Lunsford, K. J., & Bruce, B. C. (2001). Collaboratories: Working together on the Web. *Journal of Adolescent & Adult Literacy*, 45(1).
- MacManus, R. (2005, August 17, 2007). Web as Platform Mash-Ups. *Read/WriteWeb*, from http://www.readwriteweb.com/archives/web_as_platform.php
- Maness, J. M. (2006). Library 2.0: The next generation of Web-based library services. [Feature Article]. *Logos*, 17(3), 139-145.
- Markey, K. (2004). Current Educational Trends in the Information and Library Science Curriculum. [Feature Article]. *Journal of Education for Library and Information Science*, 45(4), 317-339.
- Mary, Z. (2007). *Web 2.0: hype or happiness?* Paper presented at the Proceedings of the 2007 international cross-disciplinary conference on Web accessibility (W4A).
- McCabe, G. P., & McCabe, S. A. S. (1980). Estimation and Testing of Pocket Means Using Multiple Linear Regression Techniques. *Multiple Linear Regression Viewpoints*, 10(2), 1.
- McCullagh, D., & Broache, A. (2007). Blogs turn 10--who's the father? *C|net News.com*.

- McKinney, R. D. (2006). Draft Proposed ALA Core Competencies Compared to ALA-Accredited, Candidate, and Precandidate Program Curricula: A Preliminary Analysis. [Feature Article]. *Journal of Education for Library and Information Science*, 47(1), 52-77.
- Miller, P. (2005). Web 2.0: Building the New Library. *Journal*, (45),
- Nicotera, C. L. r. (2000). Writing and updating technology plans (Book Review), *The Journal of Academic Librarianship* v. 26 no. 4 (July 2000) p. 293.
- O'Reilly, T. (2005). What Is Web 2.0, Design Patterns and Business Models for the Next Generation of Software. September 30. from <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>
- Oravec, J. A. (2003). Blending by Blogging: weblogs in blended learning initiatives. *Journal of Educational Media*, 28(2-3).
- Orr, B. (2007). Parsing the meaning of Web 2.0. [Article]. *ABA Banking Journal*, 99(4), 53-54.
- Pace, A. K. (2001). It's a matter of privacy. [Feature Article]. *Computers in Libraries*, 21(6), 50-52.
- Ralph, J., & Olsen, S. (2007). Podcasting as an Educational Building Block in Academic Libraries. [Feature]. *Australian Academic & Research Libraries*, 38(4), 270-279.
- Richardson, S. P. S. J. C. (2004). Supporting Technology Integration Within A Teacher Education System. *Journal of Educational Computing Research*, 31(4), 423-435.
- Rimland, E. (2007). Ranganathan's Relevant Rules. [Contains biographical material; Feature Article]. *Reference & User Services Quarterly*, 46(4), 24-26.
- Rosen, J. (2004). Your Blog or Mine? *New York Times Magazine*, 1-5.
- Russell, M. (2006). Freeware versus Software. *The Weblarian*, from <http://weblarian.blogspot.com/2006/04/freeware-versus-software.html>
- Russell, T. (1999). *The no significant difference phenomenon*. Chapel Hill, NC: Office of Instructional Telecommunications, University of North Carolina.
- Schaller, R. R. (1997). Moore's law: past, present and future. *Spectrum, IEEE*, 34(6), 52-59.
- Schwartz, C. A. (2007). The University Library and the Problem of Knowledge. [Feature Article]. *College & Research Libraries*, 68(3), 238-244.
- Stephens, M. (2006). Web 2.0 and Libraries: Best Practices for Social Software. [Feature Article]. *Library Technology Reports*, 42(4), 6-68.
- Stoffle, C. J., & Leeder, K. (2005). Practitioners and Library Education: A Crisis of Understanding. [Feature Article]. *Journal of Education for Library and Information Science*, 46(4), 312-319.
- Thompson, L. F. L. B. J. (2003). Web-Based Instruction: Who Is Inclined To Resist It And Why? *Journal of Educational Computing Research*, 29(3), 375-385.
- Thomsen, E. B. (2002). Blogging, anyone?, *Collection Building* (Vol. 21, pp. 76-77).
- Tileston, D. W. (2000). *10 best teaching practices : how brain research, learning styles, and standards define teaching competencies*. Thousand Oaks, Calif.: Corwin Press.
- Van Fleet, C., & Wallace, D. P. (2002). The I-word: Semantics and Substance in Library and Information Studies Education. [Feature Article]. *Reference & User Services Quarterly*, 42(2), 104-109.
- Varlejs, J. (2003). Professional Competencies for the Digital Age: What Library Schools Are Doing to Prepare Special Librarians. [Feature Article]. *Education Libraries*, 26(1), 16-18.

- Yang, Y. C., Linda F. (2004, October 19-23). *Students' Perceptions towards the Quality of Online Education: A Qualitative Approach*. Paper presented at the Association for Educational Communications and Technology, Washington, DC.
- Yi, M. Y. H., Yujong. (2003). Predicting the use of web-based information systems: Self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. *International Journal of Human-Computer Studies*, 59(4), 431-449.
- Young, A. P., Herson, P., & Powell, R. R. (2006). Attributes of Academic Library Leadership: An Exploratory Study of Some Gen-Xers. [Feature Article]. *The Journal of Academic Librarianship*, 32(5), 489-502.

Appendix A

Entire Survey Instrument

Dear Potential Participant

Page 1 of 2

Dear Potential Participant:

You are being asked to participate in a research project exploring technology and the learning process. Your participation in this project involves completing an online survey, which should take you approximately 10-15 minutes to complete. The survey will be collecting data concerning your perceptions and use of Web 2.0. The survey is an anonymous web survey.

Your participation in this study is completely voluntary. Refusal to participate will involve no penalty. You may stop any question or stop at any time. There are no known risks or discomforts involved. To assure anonymity of responses, I am asking that you not provide your name or other identifying information on the survey. While participation in this research will provide no direct benefit to you, the knowledge gained will benefit the educational community as a whole.

By completing the online survey, you are consenting to be a research participant. If you have any questions about this study, you may contact me, Clay Davis, at cdavis@riversoflearning.com, 205-310-8307, or the Faculty Advisor, Dr. Margaret Rice, at mricer@lsu.edu, 205-348-1165. If you have any questions about your rights as a research participant, you may contact, Ms. Tania Myles, Research Compliance Officer at The University of Alabama at 205-348-5152 or e-mailing cmr@ua.edu.

The web address for this survey is <http://www.riversoflearning.com/survey4/>

You may print this survey at any time for your own personal records.

Thank you in advance for your participation.

Sincerely yours,

Jonathan Clay Davis

Web 2.0 Usage and Perception Survey

Demographics

How do you identify yourself? Male Female Trans

Please choose the year in which you were born: Birth Year -

In what area(s) do you have (a) degree(s)?

Humanities Social Sciences Natural Sciences Business

Technology Engineering Law Medicine Education

What is the highest degree you've attained? High School Associates Undergraduate Master's Doctoral Other:

Web 2.0 Definition & Use

Please rate below the degree to which you agree or disagree with each of the following statements:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Web 2.0 can be defined as the read/write web.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 can be defined as social networking.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 can be defined as information sharing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 can be defined as using the web as a full-fledged computing platform.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 can be defined as the user-centered web.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 can be defined as tools on the web.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web 2.0 can be defined as: <input type="text"/> (write your own)					

Please rank the following Web 2.0 tools with regard to your own use and overall use by others on the web.

Blogs	Choose Ranking -	Choose Ranking -
Wikis	Choose Ranking -	Choose Ranking -
Social Networking	Choose Ranking -	Choose Ranking -

Video Sharing
Social Tagging
Social Cataloging
Social Bookmarking

Choose Ranking - Choose Ranking -
Choose Ranking - Choose Ranking -
Choose Ranking - Choose Ranking -
Choose Ranking - Choose Ranking -

Work Related

Non-Work Related

Do you read or write blogs? yes no don't know
Do you read or write wikis? yes no don't know
Do you read or edit (a) social networking site(s)? yes no don't know
Do you watch videos on or prepare videos for video sharing sites? yes no don't know
Do you use social tagging sites? yes no don't know
Do you use social bookmarking sites? yes no don't know
Do you use social cataloging sites? yes no don't know

yes no don't know
 yes no don't know
 yes no don't know
 yes no don't know
 yes no don't know
 yes no don't know
 yes no don't know

[Next](#)

Blogs

For the purpose of this survey, **blogging is defined as an online diary or editorial wherein readers of the blog may provide comments. Examples include: Blogger, Wordpress, Typepad, and Moveable type.**

Work Related Blogs

About how much time each week (in hours) do you spend writing blogs?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different blogs do you write per week?

- 0
- 1
- 2
- 3
- 4 or more

Considering all your professional blogging, about how many blog posts do you write per week?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been blogging for work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check your blog reader?

- 0
- 1
- 2
- 3
- 4 or more

About what percentage of the time do you follow through to the full story of an article in your blog reader?

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76% +

Non-Work Related Blogs

About how much time each week (in hours) do you spend writing blogs?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different blogs do you write per week?

- 0
- 1
- 2
- 3
- 4 or more

Considering all your non-work blogging, about how many blog posts do you write per week?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been blogging outside of work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check your blog reader?

- 0
- 1
- 2
- 3
- 4 or more

About what percentage of the time do you follow through to the full story of an article in your blog reader?

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76% +

Please indicate which blogging applications you have heard of/used: (check all that apply)

	Blogger	Wordpress	Typepad	Moveable Type	Other Application	None of these
Which of these blogging applications have you heard of?	<input type="checkbox"/>					
Which of these blogging applications have you used for work?	<input type="checkbox"/>					
Which of these blogging applications have you used outside of work?	<input type="checkbox"/>					

Please indicate which blog readers you have heard of/used: (check all that apply)

	Bloglines	Google reader	Voyage	Feedoor	Other Application	None of these
Which of these blog readers applications have you heard of?	<input type="checkbox"/>					
Which of these blog readers have you used for work?	<input type="checkbox"/>					
Which of these blog readers have you used outside of work?	<input type="checkbox"/>					

Please rate the degree to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I understand the concept of why people blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how to post a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to post a blog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to modify functionality of a blog, such as adding a widget or changing the theme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to post a blog using multiple applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to create a blog reader account	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how RSS aggregators work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to subscribe to an RSS feed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to unsubscribe from an RSS feed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Wikis

For the purpose of this survey, a wiki is defined as an online book or collection of pages that is publicly or privately editable by one or more people. Examples include: Pwiki, Mediawiki, Wikipedia, Wetpaint.

Work Related Wikis

About how much time each week (in hours) do you spend editing or adding to wikis?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different wikis do you edit or add to per week?

- 0
- 1
- 2
- 3
- 4 or more

Considering all of your work related wiki accounts, about how many changes/edits do you perform per week?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a wiki at work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain work related wikis have been updated?

- 0
- 1
- 2
- 3
- 4 or more

Please indicate which wiki applications you have heard of/used. (check all that apply)

Which of these wiki sites have you heard of?

Which of these wiki sites have you visited for work?

Which of these wiki sites have you visited outside of work?

In which of these wiki sites have you edited for work?

In which of these wiki sites have you edited outside of work?

Non-Work Related Wikis

About how much time each week (in hours) do you spend editing or adding to wikis?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different wikis do you edit or add to per week?

- 0
- 1
- 2
- 3
- 4 or more

Considering all of your non-work related wiki accounts, about how many changes/edits do you perform per week?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a wiki outside of work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain non-work related wikis have been updated?

- 0
- 1
- 2
- 3
- 4 or more

	Pwiki	Mediawiki	Wikipedia	Wetpaint	Other Application	None of these
Which of these wiki sites have you heard of?	<input type="checkbox"/>					
Which of these wiki sites have you visited for work?	<input type="checkbox"/>					
Which of these wiki sites have you visited outside of work?	<input type="checkbox"/>					
In which of these wiki sites have you edited for work?	<input type="checkbox"/>					
In which of these wiki sites have you edited outside of work?	<input type="checkbox"/>					

Please rate the degree to which you agree or disagree with the following statements:

I understand the concept of why people use Wikis.

I understand the concept of how to edit a wiki.

I'm able to edit a wiki.

I'm able to modify functionality of a wiki, such as a adding a picture or changing the theme.

I'm able to edit a wiki at multiple wiki sites.

I understand the concept of how Wikis can be syndicated.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I understand the concept of why people use Wikis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how to edit a wiki.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to edit a wiki.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to modify functionality of a wiki, such as a adding a picture or changing the theme.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to edit a wiki at multiple wiki sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how Wikis can be syndicated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Next](#)

Social Networking

For the purpose of this survey, a Social Networking site is defined as an online meeting place or collection of pages that is publicly or privately editable. Examples include: Facebook, Myspace, LinkedIn.

Work Related Social Networking

About how much time each week (in hours) do you spend updating your profile(s) in your social networking account(s) for work?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different social networking accounts do you edit or add to per week?

- 0
- 1
- 2
- 3
- 4 or more

Considering all your work related social networking accounts, about how many changes/edits do you perform per week for the work account(s)?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a social networking account at work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain work related social networking accounts have been updated?

- 0
- 1
- 2
- 3
- 4 or more

Non-Work Related Social Networking

About how much time each week (in hours) do you spend updating your profile(s) in your non-work related social networking account(s)?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different non-work related social networking accounts do you edit or add to per week?

- 0
- 1
- 2
- 3
- 4 or more

Considering all your non-work related social networking accounts, about how many changes/edits do you perform per week for the non-work related account(s)?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a social networking account outside of work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain non-work related social networking accounts have been updated?

- 0
- 1
- 2
- 3
- 4 or more

Please indicate which social networking websites you have heard of/used. (check all that apply)

	Facebook	Myspace	LinkedIn	Other Application	None of these
Which of these social networking websites have you heard of?	<input type="checkbox"/>				
Which of these social networking sites have you visited for work?	<input type="checkbox"/>				
Which of these social networking sites have you visited outside of work?	<input type="checkbox"/>				
Which of these social networking sites have you edited for work?	<input type="checkbox"/>				
Which of these social networking sites have you used to communicate with the owner?	<input type="checkbox"/>				
Which of these social networking sites have you used to post a message to other visitors?	<input type="checkbox"/>				

Please rate the degree to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I understand the concept of why people use social networking sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how to edit a profile in a social networking sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to edit a profile on a social networking site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to modify functionality of a social networking site, such as adding a picture joining a group, changing the theme, or adding another application.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to edit a profile in a multiple social networking sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how updates to social networking site profiles can be syndicated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Next](#)

Video Sharing

For the purpose of this survey, a Video Sharing tool is defined as an online interface that allows users to upload personal videos for the purpose of sharing them on the internet with others. Examples include: YouTube, VideoJug, TVinci.

Work Related Video Sharing

About how much time each week (in hours) do you spend preparing work related videos for your video sharing account(s) ?

0 1 2 3 4 or more

To about how many different work related video sharing accounts do you upload videos per week?

0 1 2 3 4 or more

Considering all your work related video sharing accounts, about how many videos per week do you upload for the work account(s)?

0 1 2 3 4 5
 6 7 8 9 or more

For about how many years have you been using a video sharing account at work?

0 <1 1 2 3 4 or more

About how many times per week do you check for new work-related videos on a video sharing account?

0 1 2 3 4 or more

Non-Work Related Video Sharing

About how much time each week (in hours) do you spend preparing videos for your non-work related video sharing account(s) ?

0 1 2 3 4 or more

To about how many different non-work related video sharing accounts do you upload videos per week?

0 1 2 3 4 or more

Considering all your non-work related video sharing accounts, about how many videos per week do you upload for the non-work related account(s)?

0 1 2 3 4 5 6 7
 8 9 or more

For about how many years have you been using a video sharing account outside of work?

0 <1 1 2 3 4 or more

About how many times per week do you check for new non-work related videos on a video sharing account?

0 1 2 3 4 or more

Please indicate which video sharing applications you have heard of/used: (check all that apply)

YouTube VideoJug TVinci Other None of Application these

Which of these video sharing websites have you heard of?	<input type="checkbox"/>				
At which of these video sharing sites have you viewed videos for work?	<input type="checkbox"/>				
At which of these video sharing sites have you viewed videos outside of work?	<input type="checkbox"/>				
To which of these video sharing sites have you uploaded videos for work	<input type="checkbox"/>				
To which of these video sharing sites have you uploaded videos for work	<input type="checkbox"/>				

Please rate the degree to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I understand the concept of why people use video sharing tools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how to produce videos for a video sharing site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to create and upload a video to a video sharing site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to embed a shared video in a web page.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to upload videos to multiple sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how updates to video sharing accounts can be syndicated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Next](#)

Social Tagging

For the purpose of this survey, Social Tagging is defined as the process of categorizing and describing things on the internet. These categories are sometimes referred to as folksonomies, wherein the categories and descriptions are generated by a community at large with informality, instead of formalized and structured metadata. Examples include: Technorati, GoogleCloud, Clouldalicious.

Work Related Social Tagging

About how much time each week (in hours) do you spend using social tagging tools for your work?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different social tagging accounts do you tag per week?

- 0
- 1
- 2
- 3
- 4 or more

About how many total tags per week do you submit for all of your work related social tagging account(s)?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a social tagging tool at work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain work related social tagging sites have been updated?

- 0
- 1
- 2
- 3
- 4 or more

Non-Work Related Social Tagging

About how much time each week (in hours) do you spend using social tagging tools outside of your work?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different non-work related social tagging accounts do you tag per week?

- 0
- 1
- 2
- 3
- 4 or more

About how many total tags per week do you submit for all of your non-work related social tagging account(s)?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a social tagging tool outside of work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain non-work related social tagging sites have been updated?

- 0
- 1
- 2
- 3
- 4 or more

Please indicate which Social Tagging applications you have heard of/used (check all that apply):

	Technorati	Clouldalicious	Google Cloud	Other Application	None of these
Which of these social tagging websites have you heard of?	<input type="checkbox"/>				
Which of these social tagging sites have you visited for work?	<input type="checkbox"/>				
Which of these social tagging sites have you visited outside of work?	<input type="checkbox"/>				
At which of these social tagging sites have you added tags for work?	<input type="checkbox"/>				
At which of these social tagging sites have you added tags outside of work?	<input type="checkbox"/>				

Please rate the degree to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I understand the concept of why people use social tagging tools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how social tags work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how tagging clouds and tagging storms work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to submit a tag to a social tagging tool.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to submit a tag at multiple tagging sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how updates to social tagging sites can be syndicated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to validate my syndication (RSS) for submission into a social tagging cloud.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Next](#)

Social Bookmarking

For the purpose of this survey, social bookmarking is defined as the process of marking sites (URL addresses) you like or use often on the internet, by submitting them to a publicly or privately available online bookmarking service. If permission is granted by the holder of the bookmark, the bookmark can then be shared with other bookmark users and harvested and searched by the internet at large. Examples include: Delicious, StumbleUpon.

Work Related Social Bookmarking

About how much time each week (in hours) do you spend using social bookmarking tools for your work?

0 1 2 3 4 or more

In about how many different social bookmarking accounts do you bookmark per week?

0 1 2 3 4 or more

Considering all the social bookmarking accounts you have for work, about how many bookmarks per week do you submit?

0 1 2 3 4 5 6 7 8 9 or more

For about how many years have you been using a social bookmarking tool at work?

0 <1 1 2 3 4 or more

About how many times per day do you check to see if certain work related social bookmarking sites have been updated?

0 1 2 3 4 or more

Non-Work Related Social Bookmarking

About how much time each week (in hours) do you spend using social bookmarking tools outside of your work?

0 1 2 3 4 or more

In about how many different non-work related social bookmarking accounts do you bookmark per week?

0 1 2 3 4 or more

Considering all the social bookmarking accounts you have outside of work, about how many bookmarks per week do you submit?

0 1 2 3 4 5 6 7 8 9 or more

For about how many years have you been using a social bookmarking tool outside of work?

0 <1 1 2 3 4 or more

About how many times per day do you check to see if certain non-work related social bookmarking sites have been updated?

0 1 2 3 4 or more

Please indicate which Social Bookmarking applications you have heard of/used: (check all that apply)

	Delicious	ShumbleUpon	Google BookMarks	Other Application	None of these
Which of these social bookmarking websites have you heard of?	<input type="checkbox"/>				
Which of these social bookmarking sites have you visited for work?	<input type="checkbox"/>				
Which of these social bookmarking sites have you visited outside of work?	<input type="checkbox"/>				
To which of these social bookmarking sites have you added bookmarks for work?	<input type="checkbox"/>				
To which of these social bookmarking sites have you added bookmarks outside of work?	<input type="checkbox"/>				

Please rate the degree to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I understand the concept of why people use social bookmarking tools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how to incorporate my social bookmarking tool into my browser.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to use others' shared social bookmarks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to submit a bookmark to a social bookmarking site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to share my social bookmarks with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to submit a bookmark to multiple social bookmarking sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how updates to social bookmarking sites can be syndicated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Next](#)

Social Cataloging

For the purpose of this survey, social cataloging is defined as the process of marking books, music, or collections in a social cataloging site. If permission is granted by the holder of the social catalog, the catalog can then be shared with other social catalog site users and harvested and searched by the internet at large. Examples include: LibraryThing, Discogs, Flixster, & BBster.

Work Related Social Cataloging

About how much time each week (in hours) do you spend using social cataloging tools for your work?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different social cataloging accounts do you catalog per week?

- 0
- 1
- 2
- 3
- 4 or more

About how many social catalog entries per week do you submit for work ?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a social cataloging tool at work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain work related social cataloging sites have been updated ?

- 0
- 1
- 2
- 3
- 4 or more

Non-Work Related Social Cataloging

About how much time each week (in hours) do you spend using social cataloging tools outside of your work?

- 0
- 1
- 2
- 3
- 4 or more

In about how many different non-work related social cataloging accounts do you catalog per week?

- 0
- 1
- 2
- 3
- 4 or more

About how many social catalog entries per week do you submit outside work ?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 or more

For about how many years have you been using a social cataloging tool outside of work?

- 0
- <1
- 1
- 2
- 3
- 4 or more

About how many times per day do you check to see if certain non-work related social cataloging sites have been updated ?

- 0
- 1
- 2
- 3
- 4 or more

Please indicate which social cataloging applications you have heard of/used: (check all that apply)

	LibraryThing	Discogs	Flixster	BBster	Other Application	None of these
Which of these social cataloging websites have you heard of?	<input type="checkbox"/>					
Which of these social cataloging sites have you visited for work?	<input type="checkbox"/>					
Which of these social cataloging sites have you visited outside of work?	<input type="checkbox"/>					
At which of these social cataloging sites have you cataloged for work?	<input type="checkbox"/>					
At which of these social cataloging sites have you cataloged outside of work?	<input type="checkbox"/>					
At which of these social cataloging sites have you communicated with another users?	<input type="checkbox"/>					

Please rate the degree to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
I understand the concept of why people use social cataloging tools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how the socialization aspect of social cataloging tools works.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to search a social catalog site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to submit a bookmark to a social cataloging site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to share my social catalogs with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm able to submit a catalog entry to multiple social cataloging sites.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the concept of how updates to social cataloging sites can be syndicated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Next](#)

Appendix B

Surveys for Table 1.2

Fall 2005 Survey, * = items removed

	<i>SD</i>	<i>D</i>	<i>Neither</i>	<i>A</i>	<i>SA</i>
1. Blogs provide more discussion than normal class discussions. *					
2. I wish I had more time to devote to the blogs. *					
3. I think blogs should be used in every class *					
4. Blogs provide more detailed response to a question than normal class discussions.					
5. Reading blogs helps me to understand more about the author.					
6. I felt comfortable writing blogs at the beginning of the class.					
7. I felt comfortable writing blogs after some time passed in the class. *					
8. Writing blogs helped me to understand the topics.					
9. Reading other classmate's blogs helped me to understand the topics.					
10. I like the posting process of blogs, now, in the middle of the course.					
11. I liked the posting process of blogs from the beginning of the course.					
12. Having used blogs in this course, I will investigate other blogs in the future. *					
13. Being exposed to blogs in this class motivated me to find another blog I like.					
14. I like the wordpress interface, now, since I've used it this semester.					
15. I liked the wordpress interface at the beginning of the course.					
16. Changing the skin on a blog interests me.					
17. A blog should be geared for ease of the reader.					
18. A blog should be geared for ease of the writer.					
19. I like to post comments back on other blogs.					
20. Blogs have changed my perception of communicating using technology. *					
21. I felt more motivated to discuss with others because of the blogs.					

22. I felt more motivated to think about the class off hours because of the blogs.

--	--	--	--	--	--

Spring 2006 Survey, *= items removed

	<i>SDA</i>	<i>DA</i>	<i>Neither</i>	<i>A</i>	<i>SA</i>
magnitude					
I believe I am able to post a blog.					
I believe I am able to comment on another's blog.					
I believe I am able to change the skin on a blog.					
I believe I am able to use a blog reader.					
I believe I am able to search for other blogs that might interest me. *					
strength					
I believe I am able to post a blog very well.					
I believe I am able to comment on another's blog very well.					
I believe I am able to change the skin on a blog very well.					
I believe I am able to use a blog reader very well.					
I believe I am able to search for other blogs very well that might interest me. *					
generalizability					
I believe I am able to post a blog very well, even if the interface has changed.					
I believe I am able to comment on another's blog very well, even if the interface has changed.					
I believe I am able to change the skin on a blog very well, even if the interface has changed.					
I believe I am able to use a blog reader, very well, even if the interface has changed.					
I believe I am able to search for other blogs very well that might interest me, even if the interface has changed. *					

Fall 2006 survey	<i>SDA</i>	<i>DA</i>	<i>Neither</i>	<i>A</i>	<i>SA</i>
I believe I am able to post a blog.					
I believe I am able to comment on another's blog.					
I believe I am able to change the skin on a blog.					
I believe I am able to use a blog reader.					
I believe I am able to search for other blogs that might interest me.					
I believe I am able to post a blog very well.					
I believe I am able to comment on another's blog very well.					
I believe I am able to change the skin on a blog very well.					
I believe I am able to use a blog reader very well.					
I believe I am able to search for other blogs very well that might interest me.					
I believe I am able to post a blog very well, even if the interface has changed.					
I believe I am able to comment on another's blog very well, even if the interface has changed.					
I believe I am able to change the skin on a blog very well, even if the interface has changed.					
I believe I am able to use a blog reader, very well, even if the interface has changed.					
I believe I am able to search for other blogs very well that might interest me, even if the interface has changed.					

Appendix C

“Other” write-in responses for Web 2.0 definition

Other Definitions (n=37, .42 %)
a way to give and receive authentic feedback in real time - an exchange of ideas.
collaboration
collaborative
global and local interactive media.
interactive
interactive innovations
interactive internet tools.
the editable web.
all of the above
collaborative computing, interaction
communication
communication interactions
socializing via the Web
using web to build, maintain and interact virtual communities
a trend in the use of technology and design that aims to facilitate creativity, info sharing, and collaboration
an integrated learning environment.
collaborative interactivity on the web; sharing of knowledge and creation of collaborative knowledge
flexible customized, information sharing
information collaboration
information fusion
tools that harness collective intelligence. Tools that gain utility as they gain more users.

information sharing and social networking tools and resources to bring the web community together,
innovative yet user-friendly applications
tchnologically enhancing
the evolution of customizable platforms that allowed shared communication and broader interaction.
a way to customize the web to your needs
changes on the parts of web content and service providers that enable a more fully participatory Web (i.e. allows users with fewer technical skills to
User controlled Content
user-generated content on the Web.
engaging, useful Internet tools
making the web easier for non experts and non technically oriented individuals
skills you learn to help you navigate the online information world (blogs, RSS feeds, etc.).
web teacher
a silly buzz word
getting really, really old.. when are we at web 3.0?!?!
jargon
something I had to look up in wikipedia to find out what it means to the more initiated into the jargon of the day. So I used web 2.0 as I understand

Appendix D

Email Requesting Participation

Hello, Professor X

My name is Clay Davis, and I'm a PhD student in Instructional Technology at the University of Alabama. It has been almost two years in the making, and I'm finally ready to begin research for my dissertation. I would sincerely appreciate your help as I conduct research for my dissertation on "Definition, Use & Prediction of Use of Web 2.0 Technologies among Graduate Library School Students and Academic Librarians at Universities with ALA Accredited Library Schools".

Why is this study being done?

Librarians of today are having to exist with and help patrons with Web 2.0 tools and concepts (such as blogging), and studies show that if self-efficacy toward a concept is raised then a higher competency and possibly even usage of the task can usually be predicted (A. Bandura, 1977).

This study will hopefully help educators for library and information sciences understand more about the kind of learning environment where competence towards web 2.0 activities is increased, and therefore could better prepare library school students for the new trends in organization of information.

What is the target audience for this research?

I am primarily interested in students that are preparing to be library practitioners (Special libraries, Academic Libraries, Public Libraries, Medical Libraries, etc), because of the direct relationship they have with the core focus of the research.

Has this research been approved?

This research has been granted "Exempt Status" under the governing body of the University of Alabama Institutional Review Board. This means that this research is:

" involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior"

What do I have to do if I want to participate?

If you'd like to participate, please reply back to me, and I'll forward you the link for the survey, which you can pass on to your faculty, who could then pass this link on to his or her students.

What do I do if I don't want to participate?

If you're not interested in participating, a friendly "not interested" reply is gladly appreciated, but if you don't have time, simply delete the email.

Thank you so much for your help in this research.

Clay Davis
Manager, Area Computing Services
School of Library & Information Services
University of Alabama
Tuscaloosa, AL

Appendix E

Hierarchical Regression Tables for Web 2.0 Usage

Summary of Models Regressing Blog Usage on Web 2.0 Organizational Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.08** ^a	--
Web 2.0 Organizational Self-Efficacy	.02	.00	.28		
Model 2				.11** ^b	.03**
Web 2.0 Organizational Self-Efficacy	.02	.00	.30		
Gender	.19	.04	.05		
Highest Degree	-.25	.03	-.10*		
Librarian/Student	.52	.03	.19*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 945.05) = 668.290, p < .001; f^2 = .17$; ^b $F(4, 331.90) = 242.760, p < .001; f^2 = .29$

Summary of Models Regressing Wiki Usage on Web 2.0 Organizational Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.03** ^a	--
Web 2.0 Organizational Self-Efficacy	.02	.00	.17		
Model 2				.05** ^b	.02**
Web 2.0 Organizational Self-Efficacy	.02	.00	.16		
Gender	.06	.03	.02		
Highest Degree	-.18	.02	-.10*		
Librarian/Student	.55	.03	.25*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 98.478) = 99.775, p < .001; f^2 = .17$; ^b $F(4, 129.999) = 139.138, p < .001; f^2 = .29$

Summary of Models Regressing Social Networking Usage on Web 2.0 Organizational Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.01** ^a	--
Web 2.0 Organizational Self-Efficacy	.01	.00	.11		
Model 2				.07** ^b	.05**
Web 2.0 Organizational Self-Efficacy	.01	.00	.14		
Gender	.64	.05	.14		
Highest Degree	-.03	.04	-.01*		
Librarian/Student	.02	.04	.01*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 559.772) = 234.406, p < .001; f^2 = .17$; ^b $F(4, 234.916) = 100.313, p < .001; f^2 = .29$

Summary of Models Regressing Video Sharing Usage on Web 2.0 Organizational Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00** ^a	--
Web 2.0 Organizational Self-Efficacy	.00	.00	-.01		
Model 2				.08** ^b	.08**
Web 2.0 Organizational Self-Efficacy	.00	.00	-.02		
Gender	.14	.02	.07		
Highest Degree	-.43	.02	-.29*		
Librarian/Student	.07	.02	.04*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 10.962) = 20.060, p < .001; f^2 = .17$; ^b $F(4, 85.592) = 169.299, p < .001; f^2 = .29$

Summary of Models Regressing Social Tagging Usage on Web 2.0 Organizational Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.02** ^a	--
Web 2.0 Organizational Self-Efficacy	.01	.00	.13		
Model 2				.10** ^b	.09**
Web 2.0 Organizational Self-Efficacy	.01	.00	.15		
Gender	.14	.03	.06		
Highest Degree	-.02	.02	-.01*		
Librarian/Student	.54	.02	.31*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 93.783) = 145.053, p < .001; f^2 = .17$; ^b $F(4, 135.698) = 229.878, p < .001; f^2 = .29$

Summary of Models Regressing Social Bookmarking Usage on Web 2.0 Organizational Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.20** ^a	--
Web 2.0 Organizational Self-Efficacy	.03	.00	.44		
Model 2				.24** ^b	.05**
Web 2.0 Organizational Self-Efficacy	.03	.00	.46		
Gender	.41	.04	.12		
Highest Degree	-.30	.03	-.10*		
Librarian/Student	.62	.03	.23*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 93.783) = 145.053, p < .001; f^2 = .17$; ^b $F(4, 135.698) = 229.878, p < .001; f^2 = .29$

Summary of Models Regressing Social Cataloging Usage on Web 2.0 Organizational Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.11** ^a	--
Web 2.0 Organizational Self-Efficacy	.01	.00	.334		
Model 2				.12** ^b	.01**
Web 2.0 Organizational Self-Efficacy	.02	.00	.35		
Gender	.08	.02	-.04		
Highest Degree	-.08	.02	-.05*		
Librarian/Student	.14	.02	.09*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 452.548) = 1010.329, p < .001; f^2 = .17$; ^b $F(4, 123.960) = 279.998, p < .001; f^2 = .29$

Summary of Models Regressing Blog Usage on Web 2.0 Social Networking Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.13** ^a	--
Web 2.0 Social Networking Self-Efficacy	.10	.00	.34		
Model 2				.16** ^b	.04**
Web 2.0 Social Networking Self-Efficacy	.11	.00	.39		
Gender	.24	.04	.07		
Highest Degree	-.04	.03	-.02*		
Librarian/Student	.56	.03	.20*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 1574.734) = 1178.633, p < .001; f^2 = .17$; ^b $F(4, 507.162) = 396.135, p < .001; f^2 = .29$

Summary of Models Regressing Wiki Usage on Web 2.0 Social Networking Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.02*** ^a	--
Web 2.0 Social Networking Self-Efficacy	.03	.00	.14		
Model 2				.08*** ^b	.06**
Web 2.0 Social Networking Self-Efficacy	.04	.00	.17		
Gender	.08	.03	.03		
Highest Degree	-.11	.02	-.05*		
Librarian/Student	.56	.03	.26*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 156.746) = 159.999, p < .001; f^2 = .17$; ^b $F(4, 149.031) = 161.161, p < .001; f^2 = .29$

Summary of Models Regressing Social Networking Usage on Web 2.0 Social Networking Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.22*** ^a	--
Web 2.0 Social Networking Self-Efficacy	.17	.00	.47		
Model 2				.25*** ^b	.03**
Web 2.0 Social Networking Self-Efficacy	.17	.00	.49		
Gender	.71	.05	.16		
Highest Degree	.20	.03	.06*		
Librarian/Student	.16	.04	.05*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 4328.252) = 2253.245, p < .001; f^2 = .17$; ^b $F(4, 1232.983) = 667.650, p < .001; f^2 = .29$

Summary of Models Regressing Video Sharing Usage on Web 2.0 Social Networking Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00 ^a	--
Web 2.0 Social Networking Self-Efficacy	-.00	.00	-.01		
Model 2				.08** ^b	.08**
Web 2.0 Social Networking Self-Efficacy	-.00	.00	-.05		
Gender	.14	.02	.07		
Highest Degree	-.44	.02	-.29*		
Librarian/Student	.06	.02	.04*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, .525) = .958, p < .001; f^2 = .17$; ^b $F(4, 87.487) = 173.369, p < .001; f^2 = .29$

Summary of Models Regressing Social Tagging Usage on Web 2.0 Social Networking Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00*** ^a	--
Web 2.0 Social Networking Self-Efficacy	.01	.00	.06		
Model 2				.09*** ^b	.09**
Web 2.0 Social Networking Self-Efficacy	.02	.00	.11		
Gender	.15	.03	.07		
Highest Degree	.05	.02	.03*		
Librarian/Student	.54	.02	.30*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 20.109) = 30.663, p < .001; f^2 = .17$; ^b $F(4, 122.515) = 205.238, p < .001; f^2 = .29$

Summary of Models Regressing Social Bookmarking Usage on Web 2.0 Social Networking Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.07** ^a	--
Web 2.0 Social Networking Self-Efficacy	.07	.00	.27		
Model 2				.11** ^b	.05**
Web 2.0 Social Networking Self-Efficacy	.08	.00	.29		
Gender	.44	.04	.13		
Highest Degree	-.01	.03	-.00*		
Librarian/Student	.57	.03	.22*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 755.480) = 566.235, p < .001; f^2 = .17$; ^b $F(4, 327.12) = 258.359, p < .001; f^2 = .29$

Summary of Models Regressing Social Cataloging Usage on Web 2.0 Social Networking Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.04*** ^a	--
Web 2.0 Social Networking Self-Efficacy	.03	.00	.20		
Model 2				.05*** ^b	.01**
Web 2.0 Social Networking Self-Efficacy	.03	.00	.20		
Gender	-.06	.02	-.03		
Highest Degree	.03	.02	.02*		
Librarian/Student	.11	.02	.07*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 152.282) = 313.890, p < .001; f^2 = .17$; ^b $F(4, 46.381) = 96.386, p < .001; f^2 = .29$

Summary of Models Regressing Blog Usage on Web 2.0 Syndication Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.10** ^a	--
Web 2.0 Syndication Self-Efficacy	.05	.00	.32		
Model 2				.13** ^b	.03**
Web 2.0 Syndication Self-Efficacy	.06	.00	.33		
Gender	.20	.04	.06		
Highest Degree	-.16	.03	-.06*		
Librarian/Student	.48	.03	.18*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 1287.524) = 938.654, p < .001; f^2 = .17$; ^b $F(4, 400.589) = 300.485, p < .001; f^2 = .29$

Summary of Models Regressing Wiki Usage on Web 2.0 Syndication Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.04*** ^a	--
Web 2.0 Syndication Self-Efficacy	.03	.00	.19		
Model 2				.09*** ^b	.05**
Web 2.0 Syndication Self-Efficacy	.03	.00	.20		
Gender	.06	.03	.02		
Highest Degree	-.16	.02	-.08*		
Librarian/Student	.54	.03	.25*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 283.324) = 293.984, p < .001; f^2 = .17$; ^b $F(4, 174.240) = 191.044, p < .001; f^2 = .29$

Summary of Models Regressing Social Networking Usage on Web 2.0 Syndication Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.00*** ^a	--
Web 2.0 Syndication Self-Efficacy	.00	.00	.03		
Model 2				.02*** ^b	.02**
Web 2.0 Syndication Self-Efficacy	.00	.00	.03		
Gender	.64	.05	.14		
Highest Degree	.05	.04	.02*		
Librarian/Student	-.05	.04	-.01*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 19.149) = 7.800, p < .001; f^2 = .17$; ^b $F(4, 109.507) = 45.551, p < .001; f^2 = .29$

Summary of Models Regressing Video Sharing Usage on Web 2.0 Syndication Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00 ^a	--
Web 2.0 Syndication Self-Efficacy	.00	.00	.04		
Model 2				.08** ^b	.08**
Web 2.0 Syndication Self-Efficacy	.00	.00	-.04		
Gender	.14	.02	.07		
Highest Degree	-.44	.02	-.29*		
Librarian/Student	.07	.02	.04*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 5.341) = 9.761, p < .001; f^2 = .17$; ^b $F(4, 86.931) = 172.174, p < .001; f^2 = .29$

Summary of Models Regressing Social Tagging Usage on Web 2.0 Syndication Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.02*** ^a	--
Web 2.0 Syndication Self-Efficacy	.02	.00	.15		
Model 2				.11*** ^b	.09**
Web 2.0 Syndication Self-Efficacy	.02	.00	.16		
Gender	.15	.03	.06		
Highest Degree	.02	.02	.01*		
Librarian/Student	.58	.02	.30*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 117.389) = 182.401, p < .001; f^2 = .17$; ^b $F(4, 141.280) = 240.477, p < .001; f^2 = .29$

Summary of Models Regressing Social Bookmarking Usage on Web 2.0 Syndication Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.08** ^a	--
Web 2.0 Syndication Self-Efficacy	.04	.00	.28		
Model 2				.11** ^b	.04**
Web 2.0 Syndication Self-Efficacy	.05	.00	.28		
Gender	.41	.04	.12		
Highest Degree	-.10	.03	-.04*		
Librarian/Student	.52	.03	.20*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 874.325) = 662.626, p < .001; f^2 = .17$; ^b $F(4, 326.474) = 257.785, p < .001; f^2 = .29$

Summary of Models Regressing Social Cataloging Usage on Web 2.0 Syndication Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.04*** ^a	--
Web 2.0 Syndication Self-Efficacy	.02	.00	.20		
Model 2				.05*** ^b	.01**
Web 2.0 Syndication Self-Efficacy	.02	.00	.21		
Gender	-.08	.02	-.03		
Highest Degree	-.01	.02	-.00*		
Librarian/Student	.09	.02	.06*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 874.325) = 662.626, p < .001; f^2 = .17$; ^b $F(4, 326.474) = 257.785, p < .001; f^2 = .29$

Summary of Models Regressing Blog Usage on Web 2.0 Video Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.19** ^a	--
Web 2.0 Video Self-Efficacy	.12	.00	.44		
Model 2				.24** ^b	.05**
Web 2.0 Video Self-Efficacy	.14	.00	.49		
Gender	.44	.04	.12		
Highest Degree	.05	.03	.02*		
Librarian/Student	.58	.03	.21*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 2381.409) = 1926.596, p < .001; f^2 = .17$; ^b $F(4, 748.533) = 644.983, p < .001; f^2 = .29$

Summary of Models Regressing Wiki Usage on Web 2.0 Video Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.00** ^a	--
Web 2.0 Video Self-Efficacy	.01	.00	.05		
Model 2				.05** ^b	.05**
Web 2.0 Video Self-Efficacy	.02	.00	.08		
Gender	.09	.03	.03		
Highest Degree	-.12	.02	-.06*		
Librarian/Student	.54	.03	.25*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 21.978) = 22.052, p < .001; f^2 = .17$; ^b $F(4, 106.005) = 112.009, p < .001; f^2 = .29$

Summary of Models Regressing Social Networking Usage on Web 2.0 Video Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.08** ^a	--
Web 2.0 Video Self-Efficacy	.10	.00	.28		
Model 2				.12** ^b	.04**
Web 2.0 Video Self-Efficacy	.11	.00	.32		
Gender	.84	.05	.19		
Highest Degree	.21	.04	.07*		
Librarian/Student	.08	.04	.02*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 1558.543) = 688.331, p < .001; f^2 = .17$; ^b $F(4, 580.219) = 267.315, p < .001; f^2 = .29$

Summary of Models Regressing Video Sharing Usage on Web 2.0 Video Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.03 ^a	--
Web 2.0 Video Self-Efficacy	.03	.00	.18		
Model 2				.10** ^b	.07**
Web 2.0 Video Self-Efficacy	.03	.00	.18		
Gender	.19	.02	.09		
Highest Degree	-.40	.02	-.27*		
Librarian/Student	.10	.02	.06*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 145.616) = 274.864, p < .001; f^2 = .17$; ^b $F(4, 107.681) = 217.707, p < .001; f^2 = .29$

Summary of Models Regressing Social Tagging Usage on Web 2.0 Video Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.00** ^a	--
Web 2.0 Video Self-Efficacy	.01	.00	.06		
Model 2				.09** ^b	.09**
Web 2.0 Video Self-Efficacy	.02	.00	.12		
Gender	.18	.03	.08		
Highest Degree	.06	.02	.03*		
Librarian/Student	.53	.02	.30*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 17,869) = 27.236, p < .001; f^2 = .17$; ^b $F(4, 123.180) = 206.468, p < .001; f^2 = .29$

Summary of Models Regressing Social Bookmarking Usage on Web 2.0 Video Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.03** ^a	--
Web 2.0 Video Self-Efficacy	.05	.00	.18		
Model 2				.08** ^b	.05**
Web 2.0 Video Self-Efficacy	.06	.00	.23		
Gender	.52	.04	.15		
Highest Degree	.00	.03	.00*		
Librarian/Student	.54	.03	.21*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 369.371) = 267.258, p < .001; f^2 = .17$; ^b $F(4, 231.859) = 176.535, p < .001; f^2 = .29$

Summary of Models Regressing Social Cataloging Usage on Web 2.0 Video Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.08** ^a	--
Web 2.0 Video Self-Efficacy	.05	.00	.29		
Model 2				.09** ^b	.01**
Web 2.0 Video Self-Efficacy	.05	.00	.31		
Gender	.01	.02	.00		
Highest Degree	.07	.02	.05*		
Librarian/Student	.13	.02	.08*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 337.652) = 730.589, p < .001; f^2 = .17$; ^b $F(4, 95.407) = 208.822, p < .001; f^2 = .29$

Summary of Models Regressing Blog Usage on Web 2.0 Wiki Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.08** ^a	--
Web 2.0 Wiki Self-Efficacy	.08	.00	.28		
Model 2				.11** ^b	.03**
Web 2.0 Wiki Self-Efficacy	.09	.00	.30		
Gender	.10	.04	.03		
Highest Degree	-.16	.03	-.06*		
Librarian/Student	.49	.03	.18*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 990.682) = 703.375, p < .001; f^2 = .17$; ^b $F(4, 332.060) = 242.888, p < .001; f^2 = .29$

Summary of Models Regressing Wiki Usage on Web 2.0 Wiki Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.11** ^a	--
Web 2.0 Wiki Self-Efficacy	.08	.00	.34		
Model 2				.18** ^b	.07**
Web 2.0 Wiki Self-Efficacy	.09	.00	.34		
Gender	-.04	.03	-.01		
Highest Degree	-.18	.02	-.09*		
Librarian/Student	.60	.03	.27*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 893.023) = 1006.758, p < .001; f^2 = .17$; ^b $F(4, 356.014) = 434.014, p < .001; f^2 = .29$

Summary of Models Regressing Social Networking Usage on Web 2.0 Wiki Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.11*** ^a	--
Web 2.0 Wiki Self-Efficacy	.12	.00	.33		
Model 2				.12*** ^b	.01**
Web 2.0 Wiki Self-Efficacy	.12	.00	.31		
Gender	.51	.05	.11		
Highest Degree	.03	.04	.00*		
Librarian/Student	.04	.04	.01*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 2104.036) = 957.854, p < .001; f^2 = .17$; ^b $F(4, 585.632) = 270.143, p < .001; f^2 = .29$

Summary of Models Regressing Video Sharing Usage on Web 2.0 Wiki Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00 ^a	--
Web 2.0 Wiki Self-Efficacy	.00	.00	.04		
Model 2				.08** ^b	.08**
Web 2.0 Wiki Self-Efficacy	.00	.00	.04		
Gender	.14	.02	.06		
Highest Degree	-.44	.02	-.29*		
Librarian/Student	.07	.02	.05*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 7.038) = 12.868, p < .001; f^2 = .17$; ^b $F(4, 86.943) = 172.200, p < .001; f^2 = .29$

Summary of Models Regressing Social Tagging Usage on Web 2.0 Wiki Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.01*** ^a	--
Web 2.0 Wiki Self-Efficacy	.02	.00	.12		
Model 2				.10*** ^b	.09**
Web 2.0 Wiki Self-Efficacy	.03	.00	.14		
Gender	.12	.03	.05		
Highest Degree	.02	.02	.01*		
Librarian/Student	.53	.02	.30*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 69.632) = 107.196, p < .001; f^2 = .17$; ^b $F(4, 130.609) = 220.301, p < .001; f^2 = .29$

Summary of Models Regressing Social Bookmarking Usage on Web 2.0 Wiki Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.10** ^a	--
Web 2.0 Wiki Self-Efficacy	.09	.00	.32		
Model 2				.14** ^b	.04**
Web 2.0 Wiki Self-Efficacy	.09	.00	.33		
Gender	.30	.04	.09		
Highest Degree	-.10	.03	-.04*		
Librarian/Student	.56	.03	.21*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 1182.109) = 922.563, p < .001; f^2 = .17$; ^b $F(4, 404.138) = 329.121, p < .001; f^2 = .29$

Summary of Models Regressing Social Cataloging Usage on Web 2.0 Wiki Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.03*** ^a	--
Web 2.0 Wiki Self-Efficacy	.03	.00	.18		
Model 2				.04*** ^b	.00**
Web 2.0 Wiki Self-Efficacy	.03	.00	.19		
Gender	-.11	.02	-.19		
Highest Degree	-.00	.02	-.00*		
Librarian/Student	.10	.02	.06*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 127.014) = 260.129, p < .001; f^2 = .17$; ^b $F(4, 40.149) = 82.903, p < .001; f^2 = .29$

Summary of Models Regressing Blog Usage on Web 2.0 RSS Reading Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.06** ^a	--
Web 2.0 RSS Reading Self-Efficacy	.10	.00	.24		
Model 2				.08** ^b	.02**
Web 2.0 RSS Reading Self-Efficacy	.09	.00	.24		
Gender	.21	.04	.06		
Highest Degree	-.17	.03	-.07*		
Librarian/Student	.39	.03	.15*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 702.825) = 483.555, p < .001; f^2 = .17$; ^b $F(4, 232.037) = 162.749, p < .001; f^2 = .29$

Summary of Models Regressing RSS Reading Usage on Web 2.0 RSS Reading Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.03*** ^a	--
Web 2.0 RSS Reading Self-Efficacy	.05	.00	.16		
Model 2				.07*** ^b	.05**
Web 2.0 RSS Reading Self-Efficacy	.05	.00	.15		
Gender	.06	.03	.02		
Highest Degree	-.14	.02	-.07*		
Librarian/Student	.50	.03	.23*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 203.541) = 207.117, p < .001; f^2 = .17$; ^b $F(4, 140.000) = 149.300, p < .001; f^2 = .29$

Summary of Models Regressing Social Networking Usage on Web 2.0 RSS Reading Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.03** ^a	--
Web 2.0 RSS Reading Self-Efficacy	.08	.00	.16		
Model 2				.05** ^b	.02**
Web 2.0 RSS Reading Self-Efficacy	.08	.00	.16		
Gender	.63	.05	.14		
Highest Degree	.06	.04	.02*		
Librarian/Student	-.07	.04	-.02*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 493.703) = 204.242, p < .001; f^2 = .17$; ^b $F(4, 230.052) = 97.288, p < .001; f^2 = .29$

Summary of Models Regressing Video Sharing Usage on Web 2.0 RSS Reading Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00 ^a	--
Web 2.0 RSS Reading Self-Efficacy	-.02	.00	-.09		
Model 2				.07** ^b	.06**
Web 2.0 RSS Reading Self-Efficacy	-.02	.00	-.08		
Gender	.12	.02	.06		
Highest Degree	-.39	.02	-.26*		
Librarian/Student	.08	.02	.05*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 35.052) = 68.131, p < .001; f^2 = .17$; ^b $F(4, 74.257) = 154.122, p < .001; f^2 = .29$

Summary of Models Regressing Social Tagging Usage on Web 2.0 RSS Reading Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00** ^a	--
Web 2.0 RSS Reading Self-Efficacy	.03	.00	.09		
Model 2				.09** ^b	.08**
Web 2.0 RSS Reading Self-Efficacy	.02	.00	.08		
Gender	.15	.03	.06		
Highest Degree	.02	.02	.01*		
Librarian/Student	.50	.02	.28*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 46.552) = 70.550, p < .001; f^2 = .17$; ^b $F(4, 114.030) = 187.563, p < .001; f^2 = .29$

Summary of Models Regressing Social Bookmarking Usage on Web 2.0 RSS Reading Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.08** ^a	--
Web 2.0 RSS Reading Self-Efficacy	.11	.00	.29		
Model 2				.11** ^b	.03**
Web 2.0 RSS Reading Self-Efficacy	.11	.00	.29		
Gender	.42	.04	.12		
Highest Degree	-.11	.03	-.05*		
Librarian/Student	.44	.03	.17*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 969.090) = 735.303, p < .001; f^2 = .17$; ^b $F(4, 327.641) = 256.853, p < .001; f^2 = .29$

Summary of Models Regressing Social Cataloging Usage on Web 2.0 RSS Reading Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.06** ^a	--
Web 2.0 RSS Reading Self-Efficacy	.06	.00	.25		
Model 2				.07** ^b	.00**
Web 2.0 RSS Reading Self-Efficacy	.06	.00	.25		
Gender	-.07	.02	-.03		
Highest Degree	-.02	.02	-.01*		
Librarian/Student	.05	.02	.04*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 253.293) = 530.293, p < .001; f^2 = .17$; ^b $F(4, 66.297) = 139.302, p < .001; f^2 = .29$

Summary of Models Regressing Blog Usage on Web 2.0 Blogging Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.20** ^a	--
Web 2.0 Blogging Self-Efficacy	.13	.00	.44		
Model 2				.23** ^b	.04**
Web 2.0 RSS Reading Self-Efficacy	.14	.00	.46		
Gender	.14	.04	.04		
Highest Degree	-.24	.03	-.10*		
Librarian/Student	.56	.03	.21*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 2422.204) = 1967.649, p < .001; f^2 = .17$; ^b $F(4, 715.760) = 608.223, p < .001; f^2 = .29$

Summary of Models Regressing Blogging Usage on Web 2.0 Blogging Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	ΔR^2
Model 1				.02** ^a	--
Web 2.0 Blogging Self-Efficacy	.03	.00	.13		
Model 2				.07** ^b	.05**
Web 2.0 RSS Reading Self-Efficacy	.04	.00	.16		
Gender	.05	.03	.02		
Highest Degree	-.17	.02	-.08*		
Librarian/Student	.55	.03	.25*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 140.855) = 143.486, p < .001; f^2 = .17$; ^b $F(4, 141.584) = 152.490, p < .001; f^2 = .29$

Summary of Models Regressing Social Networking Usage on Web 2.0 Blogging Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.08** ^a	--
Web 2.0 Blogging Self-Efficacy	.10	.00	.28		
Model 2				.10** ^b	.02**
Web 2.0 RSS Reading Self-Efficacy	.11	.00	.27		
Gender	.60	.05	.27		
Highest Degree	-.03	.04	-.00*		
Librarian/Student	.05	.04	.02*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 1565.537) = 691.685, p < .001; f^2 = .17$; ^b $F(4, 472.152) = 212.285, p < .001; f^2 = .29$

Summary of Models Regressing Video Sharing Usage on Web 2.0 Blogging Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00 ^a	--
Web 2.0 Blogging Self-Efficacy	-.00	.00	-.02		
Model 2				.07** ^b	.08**
Web 2.0 RSS Reading Self-Efficacy	.00	.00	-.08		
Gender	.14	.02	.07		
Highest Degree	-.43	.02	-.29*		
Librarian/Student	.07	.02	.04*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 1.935) = 3.533, p < .001; f^2 = .17$; ^b $F(4, 85.294) = 168.659, p < .001; f^2 = .29$

Summary of Models Regressing Social Tagging Usage on Web 2.0 Blogging Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.00** ^a	--
Web 2.0 Blogging Self-Efficacy	.01	.00	.06		
Model 2				.09** ^b	.08**
Web 2.0 RSS Reading Self-Efficacy	.02	.00	.08		
Gender	.14	.03	.06		
Highest Degree	.01	.02	.00*		
Librarian/Student	.52	.02	.30*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 17.103) = 26.065, p < .001; f^2 = .17$; ^b $F(4, 114.314) = 190.185, p < .001; f^2 = .29$

Summary of Models Regressing Social Bookmarking Usage on Web 2.0 Blogging Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.09** ^a	--
Web 2.0 Blogging Self-Efficacy	.09	.00	.30		
Model 2				.13** ^b	.04**
Web 2.0 RSS Reading Self-Efficacy	.09	.00	.31		
Gender	.37	.39	.10		
Highest Degree	-.15	.03	-.07*		
Librarian/Student	.56	.03	.21*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 1006.436) = 772.335, p < .001; f^2 = .17$; ^b $F(4, 367.929) = 295.313, p < .001; f^2 = .29$

Summary of Models Regressing Social Cataloging Usage on Web 2.0 Blogging Self-Efficacy and Common Demographics

Variable	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Model 1				.07** ^a	--
Web 2.0 Blogging Self-Efficacy	.05	.00	.27		
Model 2				.08** ^b	.00**
Web 2.0 RSS Reading Self-Efficacy	.05	.00	.28		
Gender	-.10	.02	-.05		
Highest Degree	-.04	.02	-.03*		
Librarian/Student	.02	.02	.08*		

Note: *, $p < .001$; **, $p < .001$; ^a $F(1, 294.227) = 629.300, p < .001; f^2 = .17$; ^b $F(4, 82.948) = 179.130, p < .001; f^2 = .29$

Instrument Breakdown

