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# Journalism Students, Web 2.0 and the Digital Divide

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The University of Southern Mississippi


JOURNALISM STUDENTS, WEB 2.0 AND THE DIGITAL DIVIDE


by


Mary Elizabeth Green


A Dissertation Submitted to the Graduate School of The University of Southern Mississippi in Partial Fulfillment of the Requirements of the Degree of Doctor of Philosophy


December 2009

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ABSTRACT

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The purpose of this study was to find out if students were utilizing Web 2.0

applications. Since the applications in question are often employed by the media industry,

the study aspired to find out if students majoring in mass communication and journalism

utilized the applications more often than other students. The "digital divide" is a term

used to describe the difference in skill levels in using computer technology and the

Internet. Some of the variables typically associated with the digital divide include gender,

age, ethnicity, lack of a broadband connection and previous experience using the

technology. This study looks at the variables associated with the digital divide to

determine if they make a difference in the frequency of use of the Web 2.0 applications.

Instead of finding out why students utilize the application, this study aspires to find out if

students are utilizing the applications for academic and integrative purposes, which have

a potential of enhancing one's chances of upward social mobility. Do the factors

associated with the digital divide make a difference in the use of the applications for

academic and integrative purposes?

Overall, the study found that some of the Web 2.0 applications which include

uploading photos, uploading videos, blogging, and creating web pages, were utilized

more than creating podcasts, using wikis, social bookmarks and collaborative suites. Of

the applications that were utilized more frequently, less than half of the users utilized

them for academic and integrative purposes. Although a much higher percentage of the

total users of wikis, social bookmarks, collaborative suites, and creating podcasts utilized

the applications for integrative and academic purposes, the number of users overall was very low.  The variables associated with the digital divide made some difference but not a significant one. Ethnicity was the only construct that made a significant difference in the frequency of uploading videos and blogging. Finally, the study found that mass communication and journalism students did utilize the applications more frequently than other students; however, the difference was not significant.

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DEDICATION

The present study is dedicated to my sister Ann Marie Fischer who was working on her dissertation when she died of cancer in 1992. This study is also dedicated to Dr. Author J. Kaul who made communication history interesting with his excitement, expertise and passion for the subject matter.

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TABLE OF CONTENTS

                Research Questions
                Operational Definitions
                Web 2.0 Applications Definitions
                Delimitations
                Assumptions
                Why This Study Is Important

                Historical Overview of the Internet
                Effects of the Internet on the Journalism Profession
                The Use of Web 2.0 in Educational Environments
                Internet as a Distraction to Academic Pursuits
                The Digital Divide
                The Relationship Between Computer Experience and Computer Use
                Connection Between Journalism, Motivation and the Digital Divide

                Research Questions
                Research Design
                Participants
                The Research Instrument
                Sampling and Data Collection
                Limitations
                Data Analyses

LIST OF TABLES

Table

CHAPTER I

INTRODUCTION

A little more than a decade ago, the World Wide Web was inaugurated as a portal of information for public consumption and creation. At that time, a person could not only search and view information, but it was also possible (although somewhat difficult) to create a Web site and provide information for anyone with Internet access to view (Madden & Fox, 2006). Eventually, asynchronous communication became commonplace via e-mail, and synchronous communication became possible through chat rooms and multi-user game environments. Further advancements in technology and the introduction of broadband connections has transformed the Internet into a very powerful multifaceted application ("Online World," 2006). Because of the Internet, users today are conducting business such as shopping, banking, stock trading, bill paying and sharing picture, video and music files with family and friends all from their home computers or laptops. Moreover, technology is beginning to merge. Before broadband, it was only possible to listen to radio over the Internet; now it is possible to share music and to watch and record television programs on a home computer. Currently, the Internet is morphing into a "powerful social phenomenon" ("Online World," 2006, p. 1). Through a wide array of social networking applications, users are able to collaborate from a distance on a document, spreadsheet, presentation or project, locate and share information and resources with users of similar interests around the world, and create virtual social gathering places to network. Many scholars and journalists refer to this more mature Internet as Web 2.0 (Achterman, 2006; Henke, 2007; Kurhila, 2006; Madden & Fox, 2006; O'Reilly, 2005).

The old media such as newspapers and television must compete with new media such as the Internet to survive. Unlike print media, the Internet in general is very interactive in nature. Like television and radio, the Internet provides the consumer the capability to hear and view multimedia productions. However, unlike radio and television, the Internet provides applications and resources for the average consumer to create and publish their own media. Newspapers as they exist today in linear print format may have a hard time competing with the nonlinear, interactive multimedia Web. In fact, there is evidence that newspaper circulation in the United States is slowly declining ("Fitch," 2007; "World press trends," 2007). To remain competitive, most, if not all, major news organizations have created online versions of their publications in a multimedia format complete with text, photos, videos and interactivity (Lehman-Wilzig & Cohen-Avigdor, 2004). This has created a need for media professionals to write in a format suitable for the Internet in addition to or rather than a format suitable for hardcopy (Pavlik, 1999). Conversely, because of Internet technology, media professionals are able to more easily locate and interview experts from a distance (Pavlik, 1999). As speech recognition technology improves, reporters will dictate a story into portable computers, eliminating the need for the keyboard (Pavlik, 1999). The new multimedia journalism necessitated that news organizations require their journalists to work and share knowledge with other employees in other departments to produce a story. This represents a shift from journalists working independently (Deuze, 2005).

If the Internet has changed the way media organizations gather and produce information for public consumption, then schools and universities should train future media professionals to utilize modern technology in order to produce artifacts in formats

suitable for modern-day publications. The Internet is unregulated in that anyone with access to an Internet connection can publish artifacts for public consumption. Currently, there are a few different types of applications such as blogs, wikis, Google Docs and Google sites available on the Internet often free of charge that allow for interactivity, collaboration and a place to publish artifacts for public consumption. The same applications can be utilized in an educational setting to train students in the collaboration process and on how the applications might be utilized in a professional setting. At the same time, it is possible for students to utilize the applications either for a class project or on their own initiative to create digital portfolios for the purpose of showcasing their talents for target audiences such as potential future employers. When mass communication students are utilizing the Web 2.0 applications to create artifacts suitable for modern publications, whether as a required assignment or on their own, and when they are utilizing the applications to collaborate on academic projects, they are in essence training themselves in the use of the technology.

Although the Internet is relatively easy to use, it contains an overwhelming amount of information and applications which can be intimidating to inexperienced users. Performing functions such as uploading photos or downloading music and then locating the artifact when finished can be difficult for inexperienced users. Each consumer's experience using the Internet is as unique as the consumers themselves. In the first place, some consumers may not have an interest in utilizing the Internet resources. Some consumers may live in rural areas where access to broadband connection is relatively new or nonexistent and dial-up takes too long. Some potential Internet users may not have the financial resources to secure the equipment and subscription fees associated with

convenient Internet connection. Still others may have broadband connection at home, but they may not have the time or opportunity to use it because of time constraints caused by domestic responsibility or competition for use of the only computer among several users in the domicile. As with all Internet consumers, not all students have convenient access to a broadband Internet connection, nor do they have equal experience using the Internet. Although there is wireless broadband Internet connection available on most college campuses, not all students live on college campuses or own their own computers. Some students may live in rural areas where broadband is not yet available. Their daily commute to campus takes time away from academics and other creative activities, while their lack of broadband connection at home limits the capability or greatly increases the time it takes to engage in such tasks as uploading photos or downloading music files. Furthermore, for one reason or another some students grew up without computer technology and Internet connection at home and are, therefore, less experienced using the Web 2.0 technology. An individual who grew up without convenient access to the Internet may be unaware of the applications available to them and of their potential use for upward social mobility. The gap between those who possess convenient access to the Internet and computer technology and knowledge of how to utilize it to their advantage and those who lack access and skills to use the technology is often referred to as the "digital divide" ("The Clinton-Gore Administration", n.d.).

<div align="center">Research Questions</div>

Because of the new trends in journalism, it is important for mass communication and journalism students to be familiar with the Web 2.0 technology upon graduation from college. The focus of this study will be to gain insight on whether mass communication

and journalism students and other students use the Internet Web 2.0 applications. If the students are using Web 2.0 applications, what needs are they satisfying when using the applications? The first purpose of this dissertation is to find out if undergraduate students at a medium-sized college in the Southeastern part of the United States utilize the Web 2.0 applications.

**RQ[1] Do undergraduate college students in general use Web 2.0 applications?**

There is potential to use the Web 2.0 applications for academic purposes, as well as personal integrative or professional development and promotion purposes. For example, students can bookmark resources online so that they can be easily shared with fellow students or others around the world, possibly connecting to professionals in their field of study. Students can post their creative work online in a portfolio format for potential employers to view. Since the Web 2.0 applications can be utilized for entertainment and not academic or professional socialization as well as for academic and personal integrative purposes the study aspires to find out that if students are utilizing the Web 2.0 applications, how often are they employing them for academic and personal integrative purposes?

**RQ[2] Do undergraduate college students in general use Web 2.0 applications for cognitive and personal integrative purposes?**

The Internet in general and many Web 2.0 applications are a communication medium. It would be reasonable to assume that students majoring in mass communication and journalism would have a heightened interest in utilizing the Web 2.0 applications. A second purpose of this study is to find out if students majoring in mass communication and journalism utilize the Web 2.0 applications more than students not majoring in mass communication and journalism.

**RQ[3] Do students majoring in mass communication and journalism use Web 2.0 applications more frequently than students not majoring in mass communication and journalism?**

Since many of the Web 2.0 application are utilized in the mass communication industry, it would be reasonable to assume that students majoring in mass communication and journalism would be more motivated to utilize the Web 2.0 applications for academic and personal integrative purposes. For example, photojournalism and journalism students can post their photos, videos and writing samples into personal Web pages, blogs or wikis, creating online portfolios for promoting themselves professionally. This study aspires to ascertain if mass communication and journalism students are more likely to use Web 2.0 applications for personal integrative and cognitive/academic needs more than students not majoring in mass communication and journalism.

**RQ[4] Do students majoring in mass communication and journalism use Web 2.0 applications for cognitive and personal integrative purposes more that students not majoring in mass communication and journalism?**

Convenient access to the Internet and its many Web 2.0 applications, knowledge of and expertise in utilizing the technology and the type of Internet connection is unique to each individual in a population. The difference between individuals who grew up with the technology, have the education, knowledge and expertise to utilize the technology for their advantage and those that have limited access and experience is referred as the "digital divide." Since the advent of the Internet, the digital divide often fell along gender, age, ethnicity, socioeconomic status, prior experience utilizing the technology and convenient access to a broadband connection. As the hardware became less expensive, the infrastructure improved to where broadband is more prevalent, the digital divide appears to be narrowing or almost nonexistent (Watson et al., 2004). However,

other scholars disagree and suggest that a divide still does exist (Bulger 2007). A third

purpose of this study is to find out if the digital divide in terms of age, gender, race,

experience using technology and home access to broadband affect the use of Web 2.0

applications and the purpose for which they are utilized.  Concerning the digital divide

the current study aspires to answer the following questions.

**RQ[5] Does gender make a difference in the overall frequency of the use of Web 2.0 applications?**

**RQ[6] Does gender make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

**RQ[7] Does ethnicity make a difference in the overall frequency of the use of Web 2.0 applications?**

**RQ[8] Does ethnicity make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

**RQ[9] Does age make a difference in the overall frequency of the use of Web 2.0 applications?**

**RQ[10] Does age make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

**RQ[11] Do students who had access to the Internet in their home greater than five years prior to entering college utilize Web 2.0 applications more frequently than students who had Internet connection in their home for five years or less?**

**RQ[12] Do students who have had access to the Internet in their home for greater than five years prior to entering college utilize Web 2.0 applications for cognitive and personal integrative purposes more than students who had Internet connection in their home for five years or less?**
**RQ[13] Do students with broadband Internet connection at home utilize Web 2.0 applications more frequently than students with a dial-up connection?**

**RQ[14] Do students with broadband Internet connection at home utilize Web 2.0 applications for cognitive and personal integrative purposes more than students with a dial-up connection?**

Operational Definitions

The definitions for academic needs and affective needs came from the research of Katz, Haas and Gurevitch (1973) who identified five groups of needs common to all media consumers. The five groups identified by Katz, Haas and Gurevitch include cognitive needs, affective needs, personal integrative needs, social integrative needs and escapist needs. The current study is only concerned with cognitive and personal integrative needs since they are the needs most associated with upward social mobility. Since the population of this study are college students engaged in academic endeavours to acquire knowledge, the term "cognitive" has been replaced with "academic."

*Academic needs:* For the purpose of this study academic needs is considered the acquisition of information, knowledge and understanding of our environment and the specific field of study each individual student is pursuing. Use of the Web 2.0 applications for academic purposes means that a student would utilize the tools to gain knowledge or improve their skills. This includes performing a task for the purpose of completing a class requirement, on one's own initiative to learn or improve a skill or learn something new about their environment.

*Personal integrative needs*: For the purpose of the current study personal integrative needs include tasks that will enhance a student's credibility, confidence, stability and status in the profession they are pursuing. The tasks could include but not limited to using the social software such as social bookmarking to network with professionals in their field of study or creating a digital portfolio by employing a wiki, blog or personal website as a one stop portal with links to self authored artifacts created for the purpose of showcasing ones talents or skills to potential employers.

*Mass Communication and Journalism Majors*: The survey specifically asks subjects if they were majoring in mass communication and journalism and if they were what division (photojournalism, journalism, public relations, etc.). If a subject selected "yes" for that particular question, they were considered a mass communication and journalism student. Conversely, if a subject selected "no" for that particular question, they were considered not a mass communication and journalism student. Subject selected "I don't know" were factored out of the analyses where major was the independent variable.

*Gender:* To determine gender, a subject merely selected "male" or "female" on the survey instrument. A subject that selected "female", was considered a female for the analyses, and a subject that selected "male" on the survey was counted as a male in the analyses.

*Ethnicity:* The subjects were requested to report their ethnicity as "Caucasian," "African- American" or "other." Only 11 subjects reported "other" as their race. Since the number reporting "other" was so small, they were factored out of the analyses where ethnicity was the independent variable. For all other subjects, those who check "Caucasian" were considered of Caucasian ethnicity for the analyses. Those who checked "African-American" were considered of African-American ethnicity for the analyses.

*Age:* Because of the likelihood of there not being a large enough population of students over 40 years of age, for the purpose of this study the subjects were divided into two age group categories. The first category within the age of 18 to 20 years of age was labeled "traditional students" and the group aged 21 to 65 was labeled "nontraditional."

For the analyses where age was the independent variable, students who checked the 18 to 20 age group were put into the "traditional" group whereas subjects who checked the 21 to 65 years of age group were put into the "nontraditional' group.

*Experience Using the Technology*:  To determine a subjects experience utilizing the Internet technology two questions were ask: 1) Do you have access to a computer with Internet connection at home and 2) about how long have you had access to a computer with Internet access at home?  Subjects who answered "yes" to the first question and also indicated that they had home access for a number of years greater than five were considered "experienced" Internet users.  Subjects who answered "yes" to the first question and indicated that they and Internet connection in their home for five years or less was considered "inexperienced" users.  Subjects who answered "no" to the first question or did not indicate the length of time they had an Internet connection at home were factored out of the analyses where experience was the independent variable.  Based on the survey response 41 subjects were considered "inexperienced" users, 132 were considered "experienced' users and the remainder either answered "no" to the first question or failed to answer the second question and were factored out of the analyses.

*Broadband Internet connection*: For the purpose of this study, broadband Internet connection is considered a high-speed or faster, always-on Internet connection. Often the data are transferred by cable or DSL connection. Dial-up is different than broadband connection in that the data are often transferred over the telephone lines and is not always connected. With dial-up one must wait for the computer to dial the number and make the connection. Once connected, data travels from a remote server or computer to the local computer at a much slower rate, taking much longer for large files such as photos, videos

and multimedia presentations to load. If for some reason the computer gets disconnected from the Internet in the processes of transferring information, one must start the process again. Depending on the Internet activity one is engaged in, the completion of activity can be very time-consuming and frustrating using dial-up connections when compared to using a broadband connection.

<div align="center">Web 2.0 Applications Definitions</div>

There are many Web 2.0 applications available for use on the Internet. For the purpose of this study, the applications include uploading photos, creating and uploading podcasts, creating and uploading videos, blogging, creating a personal Web page, creating and utilizing a wiki, use of social bookmarks, and use of collaborative suites. The specific applications were chosen because of their relevance to the media industry and many of them are free.

*Blog*: According to the PC Magazine Encyclopedia, "A blog is a Web site that contains dated text entries in reverse chronological order about a particular topic" ("PCMAG.com," 1981-2009). In essence, a blog is an online journal and considered an asynchronous communication application. A blog can be set up to allow entries from only one person or entries from a group of people making it useful as a platform for academic discussion. It is possible to add links to other sites, pictures and videos to a blog entry. Anyone can set up a blog, and it is either free or requires a small yearly fee depending on the Web site used and the functionality required. A blog can function as an online portfolio. It is possible for a journalism student to start a blog that includes podcasts, videos, writing specimens and photos created for the purpose of providing examples of their work to future employers.

*Online Collaboration Suites*: An online collaboration suite such as Google Apps is a collection of Google applications and utilities that also include e-mail, instant messaging and a calendar ("PCMAG.com," 1981-2009). Specifically, Google Docs which is part of Google Apps allow students to collaborate on word-processing documents, spreadsheets and presentations asynchronously from a distance. Microsoft Office Live Workspace and Zoho are other examples of online document collaboration suites. The online applications make it much easier for two reporters physically located in different countries to collaborate on a story because it eliminates the need to e-mail different versions of the same document back and forth.

*Google Sites*: Google Sites, which is also part of Google Apps, is a Web 2.0 application that allows users to easily create their own Web site in an hour or two. The site can be linked to other Web sites or user-produced artifacts creating a digital portfolio. The Web site can be edited from any computer with Internet connection. Although Google sites utilizes a template and does not have the functionality of commercial Web site development software, it is easy to learn even for someone with limited computer experience. Using this Web 2.0 application, a student can create a page or Web site with their own photos, videos and writing samples in a matter of hours.

*Podcasts:* A podcast is essentially an audio communication file similar to a radio broadcast but that is created, distributed or shared online by anyone. A podcast that also includes video is known as a vodcast. These broadcasts can be supplemental lecture notes, an interview or recordings of a lecture. For a student majoring in broadcast journalism, podcasts are one application to utilize for creating a multimedia document or sample radio broadcast.

*Photo and Video Sharing*: Photo gallery sites such as Flickr and Photobucket and video- sharing sites such as YouTube allow amateur photographers to share their photos and videos on the Internet. The same photos and videos can be embedded into blogs and wikis creating multimedia artifacts for public consumption. Storing photos and videos online make them easy to access for journalists who are collaborating on a story from a distance. It also eliminates the need to e-mail file attachments back and forth. Photojournalism students can put samples of their work online to showcase for future employers.

*Social Bookmarking*:  According to PC Magazine Encyclopedia, social bookmarking is, "ranking a Web site by users who like the content rather than by the total number of links to the site. Social-bookmarking sites such as del.icio.us (http://del.icio.us) let users tag their favorite sites" ("PCMAG.com," 1981-2009). Users of social bookmarks are able to get to their bookmarks from any device with Internet connection and also network with other users who bookmark many of the same sites, making it a great place to share resources. For journalists, it is a place to store and share Internet resources with other journalists collaborating on a story from a distance.  For journalism students, it is a place to connect with journalists in the profession, in addition to storing Internet resources for academic purposes.

*Wiki*:  A wiki is a "Web site that can be quickly created and edited by its visitors with simple formatting rules" ("PCMAG.com," 1981-2009). The most famous wiki is Wikipedia where a few experts submitted information on various topics which can be viewed in many different languages. Wikipedia can be edited by anyone, and the whole project is an on honor-system basis. Since the advent of Wikipedia, other wikis such as

the travel wiki have evolved.  A wiki farm is a Web site where anyone can create a wiki. The fee for setting up a wiki is free or requires a small yearly fee depending on the functionality required.  Wikis are mostly asynchronous communication and are useful for collaborating on a paper or presentation when time synchronization and distance are an issue. Wikis are also great for planning a project. For journalists and journalism students, a wiki is another way to collaborate on a project and eliminates the need for e-mailing documents back and forth. Since photos, audio and video can be embedded into the wiki, it is a place to create an online portfolio.

<div align="center">Delimitations</div>

For various reasons, there were several limitations relative to this study.

1)  Because there are new Web 2.0 applications available on the Internet daily, with many of them essentially having the same functionality, the study was limited to specific categories of applications. The applications were chosen because of their cost to use (mostly free), ease of use, ability to serve as a digital portfolio or a means of collaboration, and utility in the mass media industry.

2)  Because of time and expense, the subjects were a convenience sample that came from one university in the Southeastern part of the United State and from entry-level classes, many of them from entry-level mass communication classes.

3)  Although the research of Katz, Haas and Gurevitch (1973) identified five groups of needs (cognitive, affective, personal integrative, social integrative and escapist), the scope of this study is only concerned with the cognitive and personal integrative needs. All of the needs listed above can be met by utilizing the Web 2.0 applications applicable to this study, but it is cognitive and personal

integrative needs that are most likely to enhance one's upward social mobility. Therefore, this study limits the scope to cognitive and personal integrative needs.

Assumptions

1) If a subject had home Internet connection for five years or less, it was assumed that they were an inexperienced user.

2) Conversely, if a subject had home Internet connection for greater than five years, it was assumed that they were an experienced user.

3) It is assumed that students majoring in mass communication and journalism would have a greater need to utilize the Web 2.0 applications described in this study because they are currently training to be media professionals, and the applications that enhance communication ability at a distance are often utilized in the media industry.

4) For most students the purpose of attending a four year college is to learn something as well as enhancing their potential for upward social mobility. Because all of the subjects in the current study are attending a four year college, it is assumed they have both academic and personal integrative needs.

Why This Study Is Important

Studying if and how mass communication and journalism students use Web 2.0 applications is important because they are some of the applications of the modern journalist. Because of the capabilities of the Internet, news will be published through blogs, wikis, photo and video sharing sites on the Internet by ordinary citizens often quicker than media producers can produce it. Media professionals often monitor blogs, photo sharing and video sharing sites for surveillance and news gathering purposes. In

fact, according to Fernando (2008), "when the Minneapolis, Minnesota, bridge collapsed in August 2007, the *Associated Press* began using images obtained through Flickr and Facebook" (p. 9).

Secondly, Web 2.0 applications have made it much easier for the average college student to create media for public broadcast. The technology is fairly new, much of it coming into existence within the last five years. Students who know about the technology and utilize it to their advantage, sharing resources, publishing class notes and creating digital portfolios, will have an academic advantage over students who do not know about the technology or how to use it. Students without the knowledge or skill when starting college will have fewer resources to utilize or will have to utilize cognitive energy and time learning to use the Web 2.0 applications that could have been spent on academics. If for no other reason, the journalism student who demonstrates the use of the technology to a future employer through a portfolio on the Internet may have an advantage over the student who does not because the applications are utilized in the media profession.

Studying the way students utilize collaborative Internet applications is important because of its enhanced capability compared to phone tag or e-mailing a document back and forth and because it's relatively new. The obvious disadvantage of collaboration on the Internet is the lack of physical contact with other humans. This research does not suggest that collaboration on the Internet should replace physical meetings. However, collaboration on the Internet has an advantage over physical meetings in that communication and document editing can occur synchronously or asynchronously where a specific meeting time and place is often irrelevant depending on the nature of the communication and project. In other words, collaboration can easily occur between two

or more people who may be physically located in different countries without the use of e-mail.  Moreover, with portable computers and wireless network Internet connection, collaboration can occur instantaneously at anytime from anywhere there is network service. The ease of collaboration and sharing of resources without physical proximity and the need for e-mail is very new and makes the Internet a very powerful application.

In an academic setting, student collaboration has a cognitive advantage as well as the opportunity for providing students experience using Web 2.0 applications for collaboration. Research suggests "a student can perform a task under adult guidance or with peer collaboration that could not be achieved alone" (Riddle & Dabbagh, 1999, p. 1). When students collaborate, they use language as a tool and use talking to develop their thinking. When students write their ideas and thoughts down in a blog, for example, the text version serves as a "cognitive amplifier" because it is available for later retrieval, consideration and evaluation and is accessible from virtually any mobile device with Internet connection (Warschauer, 1997, p. 471). In theory, students will learn more when they collaborate with each other. When collaboration is conducted online, the textual dialog among group members can be saved for later retrieval, consideration and evaluation, thus cognitively amplifying the learning process.

Journalism students who are comfortable using the collaborative technology will likely have an advantage over those who do not. Knowing what collaborative applications are available and how to use them for reasons other than to socialize empowers a person to form groups and work toward a specific cause. In college, for example, students who are comfortable using collaboration resource sharing applications and understand the potential of Internet collaboration should be more adept at utilizing

them to form virtual study groups, collaborate on projects or share resources with fellow students.  The same students should also be better prepared to function in the global environment where they may have to collaborate on a project.

Finally, gaining insight in how students are using the applications is important because it may provide insight on what Web 2.0 applications different students are comfortable with and how they are using them. This information can be useful when deciding what applications to utilize when developing training materials. On the Internet, there are many choices of publication and collaboration applications. It is possible to use the same application to accomplish different tasks. Conversely, it is also possible to choose between one of several applications to accomplish the same task (Frohlich, Dray & Silverman, 2001). By knowing how students utilize different publishing and collaboration applications, it is easier to cater to the target audience when preparing activities for a class. If it is found that mass communication and journalism students don't know about the applications, or know about them but don't use them for educational and professional development purposes, it may be wise to introduce them in the curriculum of an entry-level communication class emphasizing the possibilities on how the applications can enhance one's education and market to potential employers through digital portfolios when nearing graduation if utilized properly.

In summary, it is important to gain knowledge on how all students, not just mass communication and journalism students, are utilizing the Web 2.0 applications for academic purposes because the technology can enable students to exercise personal control over their learning. Because of online libraries, museums and the interactive asynchronous communication applications, students are able to access and exchange

information without constraints of time and place (Bandura, 2002). According to Bandura (2002), "A major goal of education is to equip students with intellectual applications and self-regulatory capabilities to educate themselves throughout their lifetime" (p. 281). Teaching students how to utilize the Web 2.0 applications to help them attain their goals will better prepare students for the academic journey they are currently undertaking, as well as increase their functioning in a global business environment when they graduate.

CHAPTER II

REVIEW OF THE LITERATURE

Historical Overview of the Internet

Viewed as a modern-day communication tool the Internet is utilized by the average person to communicate and network with family, friends, coworkers and experts in their fields of interest even though they may be complete strangers. For advertisers and the media industry in general, the Internet is another avenue to deliver goods and services and interact with consumers. For non-media related businesses, the Internet is a virtual store in which to offer products for sale, as well as a medium to communicate with regular customers and employees in branch offices around the world. However, the Internet was not always this versatile.

The Internet was first conceived in 1962 when the Advanced Research Projects Agency of the U. S. Department of Defense created a network prototype named ARPANET designed to allow computers to talk to each other in the event other communications were cut off because of war (Boyd-Barrett, 2006). Other hardware such as modems, routers and software, such as network protocols, were developed between 1963 and 1973. The National Science Foundation played a role in funding the development of the Internet. During the same time period, Rand, the Massachusetts Institute of Technology and National Physical Laboratory in the United Kingdom separately developed their own packet switching. By 1972, electronic mail was being sent. By 1974 the first desktop computer was introduced. By 1977 Tandy and Apple II were marketed as personal computers. In 1981 the IBM personal computer debuted.

Communication between computers by way of modem and dial-up services was possible

by 1984. Networks and networking began to proliferate, and other countries gradually

began to connect to the Internet. By 1991, one hundred countries were connected to the

Internet, commercial use restrictions on the Internet were lifted, and search applications

and commercial e-mail began to appear (Boyd-Barrett, 2006). Tim Berners-Lee

developed one of the first Web browsers along with the Hypertext Transfer Protocol

(HTTP), which was the beginning of the World Wide Web as we know it today. The

HTTP mark-up language enables Web pages to be connected to each other. The Web

browsers allow users to see individual graphical Web pages (Quittner, 1999). Gradually,

computer processors became smaller and more powerful, while hard drives or digital

storage devices became smaller in size yet held increasingly more data. In the meantime,

the development and widespread use of broadband and wireless connections made it

possible to connect and communicate with other Internet users much quicker and easier.

It also made it feasible to transfer larger files, making it possible to create and share

photos, videos and other various multimedia publications. Although, multi-user dungeons

and chat rooms have been around since the 1990s, it wasn't until around 2003 that social

networking sites such as MySpace and Del.icio.us, a social-bookmarking site, came on

the scene (Gefter, 2006; Rethlefsen, 2006). Since that time, a myriad of collaboration and

communication applications were developed, making it easy for anyone with limited

computer skills to create his or her own Web site, publish thoughts to an international

audience through a blog, create and publish audio and video segments and participate in

an international collaborative project, such as Wikipedia. Sometime during the process of

evolution, the more mature Internet became known as Web 2.0 or also the read-write

Web (Achterman, 2006; Henke, 2007; Kurhila, 2006; Madden & Fox, 2006; O'Reilly, 2005). The wireless technology enables a user to connect, create, send and retrieve information from almost anywhere. Because the Internet is so widespread and contains so much information, including the local news and weather, it can be considered a form of mass media and in direct competition with other forms of media, such as television and newspapers. The read-write capabilities of the Web have had a significant effect on the media industry.

<div align="center">Effects of the Internet on the Journalism Profession</div>

The modern Internet has had a profound effect on journalism and the way journalists produce, present and obtain news. First, an increasing number of media producers offer their main journalistic products through multiple channels and consider the Internet a strategic avenue for delivery of both news and magazines (Chung, Kim, Trammell, & Proter, 2007; Deuze, 2004). The increased online presence of various publications may be a response to the declining newspaper circulations in the United States ("Fitch," 2007; "World press trends," 2007).  In fact, it is predicted by certain scholars that newspapers will eventually become exclusively electronic (Lehman-Wilzig & Cohen-Avigdor, 2004). Today it is possible to have some newspapers and magazines delivered to your desktop in the form of a daily podcast (Madden & Jones, 2008).

The increased presence on the Internet has changed the way articles or news stories are written. Most significant is that the Internet is a hypertext environment. The hypertext environment enables journalists to include links to more information on Web sites not necessarily related to the online periodical, which is quite different from the traditional method where one author produces and presents all the information in one

story or article. The hypertext environment also puts the reader in control of gathering and producing his or her own story because the reader has control over which links to activate or conduct a Google search for more information. A journalist writing in the Internet age should take the interactive nature of the Internet into consideration when writing a piece (Huesca, 2000).

Second, an increasing number of people have access to broadband, providing the capability of efficient viewing of multimedia pieces including videos. As a result, news video on the Internet is becoming more commonplace. Although news video has been around for about six to eight years, it has mushroomed within the last 12 to 18 months. Some photojournalists have had to learn to shoot video (Layton, 2007/2008).

Third, journalists are increasingly employing blogs as a means of delivering news, and major news organizations are including blogs on their Web sites (Chung et al., 2007). In a study conducted by Chung et al., 428 professional journalists and journalism educators responded to a survey concerning blogs. The purpose of the study was to find out how frequently journalism professionals and mass media educators are using blogs and how they perceive them. The study suggests that overall use of blogs is low among professional journalists and journalism educators. Journalism professionals, particularly online journalists, utilize blogs more than journalism educators. Within the industry, the study suggests that blogs are most often used for information or surveillance and interactive communication (Chung et al., 2007).

Fourth, through the use of blogs, photo and video-sharing sites, it is much easier for the average person to publish photos, videos and text online for public consumption, which has resulted in the rise of citizen journalism. Often, the first pictures of a

newsworthy event show up on sites such as Flickr and YouTube, and a text version of eyewitness accounts show up in a blog (Fernando, 2008). An increasing number of media consumers seem to be more interested in seeking out the view of the world and less often the view of the journalist (Pisani, 2006). To compete, news organizations are providing creative ways for ordinary citizens to participate in the gathering of news (Fernando, 2008). In general, the modern journalist must become familiar with the technology to function in the journalism profession and interact with readers.

<div align="center">The Use of Web 2.0 in Educational Environments</div>

Web 2.0 resources are beginning to find a home in educational environments. Scholars confer that mobile technology and social networking resources have the potential of improving education by amplifying the information-seeking, communication and collaborative capability of students, as well as being a potential distraction to education (Barak, Lipson, & Lerman, 2006; Bugeja, 2006, 2007; Henke, 2007; Matthews & Schrum, 2003).  Like any other discipline, Web 2.0 resources have the potential to aid students enrolled in entry-level mass communication and journalism classes in academic and personal integrative endeavors, as well as being a potential for distraction.

Most of today's traditional college students grew up using technology, and nearly all of them have experience using the computer and the Internet by the time they enter college (Oblinger & Oblinger, 2005; DeBell & Chapman, 2006). Being comfortable using the technology can be an asset when first learning to use the newer Web 2.0 applications. A study conducted by the U.S. Department of Education suggests that "91% of children in nursery school through 12$^{th}$ grade use a computer, and 59% use the Internet" (DeBell & Chapman, 2006, p. iii). According to Barnes, Marateo and Ferris

(2007), "By the time students reach their 21st birthday, on average, they will have spent approximately 240,000 hours playing video games, sending e-mail, using their cell phones and watching television while spending less than 5,000 reading" (p. 2). Traditional college students are good at multi-tasking, using 2 or 3 media at the same time, including a computer and the Internet. Moreover, social networking with peers is very important to college students (Barnes et al., 2007; Oblinger & Oblinger, 2005). In fact, through their research, some scholars found that "college students are one of the largest demographic groups using the instant messaging capability of the Internet" (Flanagin, 2005, p. 175; Jones & Madden., 2002, p. 7).

<div align="center">Internet as a Distraction to Academic Pursuits</div>

Research suggests that 93% of all teens use the Internet, and nearly two-thirds of the online teens are content creators (Lenhart, Madden, Macgill & Smith, 2007). Even if students do have experience blogging, creating their own Web sites, creating and uploading videos and uploading photos, they may not think about using their creative work for academic and personal integrative purposes. Just because a student is familiar with using technology, one cannot necessarily assume that the same student will utilize it advantageously for academic purposes. The problem is that although the Web 2.0 applications provide students with an opportunity to collaborate, publish and share resources for academic enrichment, there is also the potential for the same applications to become a source of distraction and possibly lead to Internet addiction (Bugeja, 2006, 2007; Li & Chung; 2006; Matthews & Schrum, 2003). Applications such as blogs and wikis can be used for purposes such as posting daily life events for family and friends, which are not typically academic or professionally enhancing endeavors. In addition, all

of the applications are accessed through the Internet where there are many other sites that host online gaming or shopping. The same Internet portal that provides students spaces for academic collaboration and discussions also allows students to watch and record television programs, download and share music and socialize with friends. All of these functions can be a distraction every time a student logs on to the Internet. In fact, in a survey and focus group study conducted by Matthews and Schrum (2003), the students reported spending significantly more time using their computers for personal use than academic work. Other scholars confer that information seeking, entertainment and social online activities are among the primary uses of the Internet among teens and young college students (Bugeja, 2006; Eastin, 2005; "Online World," 2006). "Academics assessing learning outcomes often discover that technology is as much a distraction in the classroom as a tool" (Bugeja, 2006, p. C-1).

Compounding the problem of the Internet and social networking being a potential distraction is the fact that the typical age of the traditional college student is 18 to 25 years of age. During this time period, most are transitioning from young adults to mature adulthood and exploring their identity (Dyson & Renk, 2006). Many are leaving home for the first time without their social network for support and are unfamiliar with college life. This transition can be very stressful, and it is not uncommon for new students to show signs of depression (Dyson & Renk, 2006; LaRose & Eastin, 2004). Many students will "actively shape their environment to meet their personal needs and goals" (Dyson & Renk, 2006, p. 1232). For some students this could include heavier usage of social communication media such as instant messaging, text messages on a cell phone, and chatting in multi-user environments to communicate with family and friends left behind.

In fact, a popular reason older teens, especially girls, use social networking sites such as MySpace and FaceBook is to stay in touch with friends they rarely see in person (Lenhart & Madden, 2007).  Many students view social networking as so important that they sign up on FaceBook, which was originally university-based, before beginning their freshman year in college (Barnes, Marateo, & Ferris, 2007; "Online Social Networking," 2006). All students, including journalism students, who are transitioning from the familiar environment of home and high school to unfamiliar college life may indeed find the Internet more of a distraction than an academic aide because of its ability to instantly connect them to their friends and family at home. However, applications such as blogs, wikis, Google Docs or Microsoft Live Workspace, podcasts and videos on the Internet are communication and collaboration applications utilized by the journalism profession. For that reason, mass communication and journalism students should be more motivated to use the applications for cognitive and personal integrative purposes, as well as general socialization. Do students enrolled in entry-level mass communication classes use Web 2.0 applications for cognitive and personal integrative purposes more than students not enrolled in the classes?

Another problem is that many of the Web 2.0 collaboration applications are relatively new, and some students, including mass communication and journalism students may not be aware of them and their potential use for educational and personal integrative purposes. For example, social bookmarking applications such as Del.icio.us and Unalog debuted in 2003, and there are always new applications appearing on the Internet periodically (Gefter, 2006; Rethlefsen, 2006). Furthermore, the developers of the wiki farms, blogs and other Web 2.0 applications are constantly upgrading, enhancing

their capability. Because the sites are so new, many students and educators may not be aware of the sites and the possible benefits they might provide in an educational setting. A recent survey of 677 professors teaching at two and four-year colleges conducted by Cengage Learning, formally Thomson Learning, found that 65% of the respondents were not familiar with social networking sites and that 90% of the responders did not have a blog ("Many College Professors," 2007; Melton, 2007). Students desiring to become media professionals may be more motivated to consume more types of media because of their interest in the field. Their exposure to the different types of media may make them more aware the applications exist and how they are being utilized in the field. The heightened awareness of the applications may motivate the media students to utilize the same applications for academic and professional development purposes.

<div align="center">The Digital Divide</div>

The "digital divide" is a phrase that evolved in the late 1990s after the National Telecommunications and Information Administration released a report titled *Falling Through the Net: A Survey of the "Have Nots" in Rural and Urban America*. In general, the report found that certain populations such as women, African-Americans, Indians, low-income Americans and the disabled were less likely to have convenient Internet connection than other populations (Bulger, 2007). Similarly, in Europe, it was found that the likelihood of Internet use was influenced by gender, education, family size, household income and Internet access cost (Demoussis & Giannakopoulos, 2006).

Research by other scholars confer with National Telecommunications and Information Administration reports suggesting that the digital divide more or less falls (although not exclusively) along socioeconomic lines. Children from low-income

families and families with parents who have less than a high school education are more likely not to have computer and Internet access at home (DeBell & Chapmann, 2006; Demoussis & Giannakopoulos, 2006; Howard, Raine, & Jones, 2001; Lenhart, Madden, & Hitlin, 2005; Madigan, & Goodfellow, 2005; Oblinger & Oblinger, 2005; Roberts, Foehr, & Rideout, 2005). The fact that much of the newest communication technology is often expensive makes it more difficult for consumers in lower socioeconomic income group to obtain and puts them at a disadvantage in terms of access to information and knowledge of use compared to more affluent consumers (Ruggiero, 2000).

The research of other scholars also confer with the National Telecommunications and Information Administration report in that more whites than African-Americans and Hispanics use computers and the Internet. Whites and Asians are more likely to have computer and Internet access at home than African-Americans and Hispanics (DeBell & Chapman, 2006; Watson et al., 2004). Also conferring with the report, research suggests that males are more likely to use computers and the Internet than females because women have less discretionary time due to domestic responsibilities and males tend to be possessive of the computer (Burke, 2001). However, more recent research suggests that the difference in gender usage is diminishing and the number of African-American users is also increasing (DeBell & Chapman, 2006; Howard et al., 2001; "Online World," 2006).

By 2004 in the United States, the Internet connection became more common in homes, public libraries and schools.  A more recent report published by the National Telecommunications and Information Administration titled *A Nation Online: Entering the Broadband Age* suggests that the digital divide was rapidly shrinking and almost gone

(Watson et al., 2004). According to Bulger (2007), many authors disagree. Although having access to the technology is important, having access to broadband connection, possessing the knowledge and skills to effectively use the Internet and its various applications, and being literate enough to read, understand and evaluate the information presented on the Internet are all aspects of the digital divide (Bulger 2007; Warschauer, 2002).

In a 1999 publication, van Dijk and Hacker (2003) specifically describe four different barriers to computer and Internet access use that should be considered when studying the digital divide. The four barriers include 1) mental access caused by computer anxiety or general disinterest in the new technology, 2) no possession of the necessary hardware or Internet connection, which today would include access to broadband connection, 3) lack of digital skills caused by lack of adequate education or social support, and 4) lack of usage opportunities (van Dijk & Hacker, 2003). The lack of Internet connection is especially important because those who are connected have access to information and services that can be utilized to their financial advantage that disconnected populations lack.  For example, those who have home Internet connection can take online classes to earn a degree, get required continuing education credits, or obtain certifications from their own home at a time that is most convenient for them. Users with only public library Internet access must comply with library business hours. In addition, populations with home Internet access have convenient access to online shopping, easily comparing prices to find the best buy.

With social networks proliferating on the Internet, those who do not have convenient access to an Internet connection miss out on the advantages of online

networking. Populations who live in rural areas where only dial-up connection is available are at a disadvantage because dial-up can be very slow and often frustrating to use, especially when accessing multimedia files. Finally, if one does not have convenient access to an Internet connection, they will often be unaware of services available and will lack the skills to use them.

More recent research suggests that the most intensive users of the Internet are males under the age of 30, over half of them being white and a large percent of them having access to broadband connection at home. The second and third most intense users are age 30 to 49, well-educated and high-income. The majority of the medium and low-end Internet users in the United States have been online six years or less. Many are from middle to low income families, and combined the two groups make up about 60% of the population (Horrigan, 2007). The research of some scholars suggests that computer and Internet use experience positively correlates with computer self-efficacy and more efficient use of the technology (Cho et al., 2003; Eastin & LaRose, 2000; Eastin, 2005). Other scholars suggest that even if a person does have home computer and Internet access, they do not necessarily possess the self-conficence, skill and knowledge to use it for purposes of upward social mobility (Jung, Qui, & Kim, 2001). Although an increasing number of people have a computer and Internet connection, when taking experience using the technology into consideration, it is not unreasonable to suggest that a digital divide does still exist. Due to the fact that the digital divide is multifaceted, it is difficult to categorize studies by specific constructs. What follows is a review of several studies on the digital divide and their findings.

A study conducted by Jackson, Ervin, Gardner and Schmitt (2001) inspired to discover if gender made a difference in Internet use. The survey population consisted of 630 self-selected, Anglo-American undergraduate students. The research method was a survey mailed directly to the student's dormitory or place of residence. Of those who responded, 403 were female and 227 were male. The results of the research suggest that males possess more self-efficacy than females concerning Internet use. Despite differences in self-efficacy, there was no significant gender difference in time spent using the Internet. However, it was found that males more often use the Internet to search for information, whereas females used it more often for e-mail. There was no difference in gender concerning successful Internet search. More males had home access to computers than females (Jackson, Ervin, Gardner, & Schmidt, 2001). The problem with the study is that it was all self-reported, and the subjects were self-selected. The students who chose to participate in the study may have a stronger interest in the Internet. There were a disproportionately large number of females in the sample. The study did not discuss what students did on the Internet other than retrieve information or communicate via e-mail. The data were collected during the 1998-99 school year, and at that time public access to the Internet was relatively new and Web 2.0 applications did not exist. Despite the problems with the study, the results did suggest that females use the Internet more often to communicate than males.

Howard, Raine and Jones (2001) analyzed and reported data collected through a telephone survey between March 1 and August 20, 2000 as part of the Pew Internet and American Life project. The sample size was 12,638 with a median age of 42. The population was 79% white and 12% African-American, and of that group, 46% were

male. Concerning education, 42% had a high school education or less, 29% had some postsecondary education, 18% had a bachelor's degree, and 10% had a graduate degree. Of the entire population, only 6,413 had Internet access, and roughly half (3,506) of them were on the Internet the previous day. Of the 3,506 who were online the previous day, 2,535 were asked a series of questions about their previous day's activities on the Internet during the week, while 971 were asked about their Internet activities on the weekend. From the survey response, the researchers were able to deduce the typical daily Internet activities. What Howard et al. discovered was of those with Internet access, on average more males (57%) than females (52%) go online daily. Of those with Internet access, 56% of whites, 36% of African-Americans and 49% of Hispanics log on to the Internet in a average day. Other important findings are that only 46% of those with a high school diplomas or less log on to the Internet in a typical day, while 62% with college or graduate degrees log on daily. Family units with Internet access and an income of less than $30,000 are 11% less likely to log on to the Internet daily than family units with incomes of more than $75,000. Finally, it was found that individuals who have been using the Internet for at least three years were more likely to use the Internet on a daily basis than individuals who have used the Internet for six months or less (Howard et al., 2001). In general, this study found that gender, race, educational level achieved and family income made a difference in the amount of time spent using the Internet.

Concerning the specific Internet activities performed on an average day, Howard et al. found some differences among the daily users in the types of activities they engaged in. The majority of users sent and read e-mail daily. In general, the results from their research suggest that young adults are more likely than older adults to do fun things such

as playing games. More men than women and more experienced users go online for information and are also most likely to use the Internet to do research on major life activities. Men are more likely than women to read the news online, seek product information, seek financial information, conduct online stock trading, participate in online auctions and search sports news, while women are more likely to seek health information, get religious information, research new jobs and play online games. Younger Internet users are more likely to use the Internet to engage in activities such as play games or download music and also to execute convenience tasks such as online banking or travel arrangements. Also, the more experienced users do more different activities online than the newcomers. Similarly, in general, the research suggests that whites are more likely than African-Americans to read and send e-mail, read news online, research product information and browse for fun on the Internet (Howard, Raine, & Jones, 2001). Overall, the study suggests that men typically engage in different and more advanced activities such as participate in online auctions and stock-trading activities than women and that younger users are more likely to engage in convenience and fun activities that older users. The problem with this research is that a disproportionate number of the sample was white and had an education level of high school degree or less. In addition, the survey was taken in 2001, and Web 2.0 applications and broadband access were not as prevalent at that time.

A study designed and conducted by Samuel Ebersole was based on the uses and gratification theory and explored the active and goal-directed use of the Internet by students at school and why they chose not to use the Internet. The sample came from

selected schools in five public school districts of one Western state. The data were

collected in four ways: 1) a 75 open-ended question paper survey given to the students,

2) a short computer survey given to the students, 3) Web sites visited were tracked by the

computer, and 4) the sites visited were content analyzed. The results from the study

suggest that students would choose not to use the World Wide Web if they had the

opportunity to interact fact-to-face with their peers. Also, students more often choose

commercial sites over government or educational sites, suggesting that they need more

training in retrieving information and evaluating information obtained from the Web

(Ebersole, 2000). The problem with this study is that all of the students came from one

state; therefore, the findings cannot be generalized to the entire country. Another problem

is that the students who took the paper survey were not necessarily the same students who

took the computer survey. The computer survey was administered to the students in the

school library or media center as they logged on to a school computer, and the subjects

were self-chosen.  Only students who had parental consent and submitted the required

forms to the local school officials were permitted to use the school computers and take

the computer-based survey.  The population for the paper survey was 791, whereas the

population for the computer-based survey was 1,083. The sample for the paper-based

survey was 69% white and 51% male, whereas the computer survey was 59% male and

race data were not collected. This suggests that maybe more males than females use the

computers in the school library or media center. Another problem with the study is that

there was no way to distinguish when a student was on the computer in the school library

for the purpose of doing specific school-related assignments or if they were using the

computer for other purposes such as passing time (Ebersole). It could be that students

may know exactly what they are doing and navigate to commercial sites for entertainment purposes.

The HomeNetToo project was a 18-month field study designed to 1) determine what children do on the Internet when it is first introduced into their homes, 2) monitor how Internet activities change over time as home Internet access loses its novelty effect, 3) determine age, race and sex differences in children's Internet activity, and 4) assess how Internet activities affect children's academic performance. The population of 140 was mostly African-Americans, 58% males with an average age of 13.8 years. The median income of the population was $15,000 per year. All the participants came from single-parent families and had no previous computer or Internet access in their home. The study took place January 2001 through April 2002. The data were collected by the computer automatically recording what Web sites were visited during the project period. There were also some home visits by the researchers. To determine if the Internet activity changed over time, the time period of the research project was divided into five time periods. Academic impact was measured by changes in GPA and improved standardized test scores. The results of the project suggest that Internet use does change over time. At first the most popular sites were music, Web services, search engines, pornography and group Web sites. After one year into the project period, the most frequently visited sites were Web services, information, search engines, music and password-protected Web sites. Age made a difference. Overall, older children visited more sites and were more likely to visit corporate, group, chat, e-mail, race support and MSN/Yahoo Web sites more frequently than younger children, and white children visited more Web sites than African-American children. Furthermore, white children visited more humor/e-cards Web

sites and other language Web sites, whereas African-Americans visited more race support Web sites. Concerning gender, boys were more likely to visit pornography Web sites, while girls visited more world/environment Web sites. It should be noted that after the novelty effect wore off, visits to pornography sites declined. It is interesting to note that the children did not log onto the Internet daily, but rather logged on once every four days on average.  The study showed no evidence indicating that girls were more likely than boys to utilize the Internet's communication applications. Improved academic achievement only showed in the standardized tests and not in the overall GPA.  The research results suggest that children who participated in greater Internet activity showed higher improvement on standardized test scores than those who participated in less Internet activities (Jackson et al., 2007).  The problem with this research is that all the subjects came from low-income, single-parent families in one junior high school in the United States.  Although the authors did mention that parents participated in the project by monitoring their children's activity, they did not disclose in the article how they were able to monitor or who was actually using the computer that was recording Internet sites when the parent was not at home. Another problem with the study is that the majority of the subjects were African-American males. Finally, all of the subjects were around age thirteen.  The value of this study is that the subjects' Internet use did change over time, suggesting that as one gains more experience using the Internet, one participates in different, more complicated activities such as downloading. The study also suggests that race makes a difference in the types and variety of sites visited and that females were likely to use the communication applications more than males. It is also interesting that the subjects did not log onto the Internet daily but, instead, once every four days on

average. The findings coincide with other research in that less experienced users and

users in lower socioeconomic income groups tend not to use the Internet daily (DeBell &

Chapman, 2006; Eastin & LaRose, 2000; Howard, Raine, & Jones, 2001).

      Concerning computer and Internet technology, race, family income and parental

education make a difference. In 2003, the U.S. Department of Education's Institute of

Education Sciences National Center for Education Statistics surveyed 56,000 dwellings

in 754 sampling units in the United States. The sample dwellings participated in four

successive monthly interviews, were out of the sample for eight months, and then

participated in four more successive monthly interviews. In October 2003, supplemental

questions were given to eligible dwellings concerning computer and Internet use. All

surveys were conducted by telephone, and one representative from each family who was

15 years of age or older provided the information. In general, it was found that most

students use computers and the Internet. The results of the survey suggest that almost all

of the children ages 3 through the $12^{th}$ grade use computers, and 59% of that group used

the Internet. Among the sample, it was found that the use of computers and the Internet

was higher among whites than African-Americans and Hispanics. The study also

indicated that children in families where the parents are highly educated and children in

families with higher incomes were more likely to use computers and the Internet than

children who lived in families with parents who have only a high school diploma or less

and children in lower income families. The study did not find a difference in gender

pertaining to computer and Internet use indicating that the gender gap has closed.  The

study also pointed out that school bridges the computer and Internet usage gap in that

children who do not have computer and Internet access at home use the technology at

school (DeBell & Chapman, 2006). The problem with that assumption is that many sites are blocked to students and faculty at school, limiting sights available for consumption. Also, school access is not as convenient as home access. In general, the study found that parental education level, family income level and race made a difference in the frequency of Internet use. Overall the data analyses from this study suggests that children with parents who are more educated, children from higher income families, and white children tend to use the Internet more frequently than children from families who had parents with a high school education or less, lower income families and African-American children. Gender did not make a difference in this study. However, the study did not look at the types of activity engaged in while logged on to the Internet, only the frequency of use. This survey was taken in October 2003 when some of the social-networking sites were in their first year and many of the Web 2.0 applications did not exist. Even today, some schools still block sites that contain the access to Web 2.0 applications.

The digital divide is not a phenomenon unique to the United States. After reviewing studies from the fifth-edition European Social Survey in 2002-03 covering information from 22 European countries and another study conducted in 2004-05 in the Western Cape of South Africa, there is evidence that a digital divide exists in those areas as well (Czerniewicz & Brown, 2006; Demoussis & Giannakopoulos, 2006). Similar to the United States, both studies found that the most frequent Internet users were young males and educated individuals. Household income also significantly positively correlated with increased Internet use, and large households negatively correlated with Internet use. Like the United States, the findings from both studies also found a strong correlation between low access, low use and low self-efficacy regarding computer use. In

general, both studies found that Internet use was primarily influenced by age, gender, household income, household size and experience using the technology (Czerniewicz & Brown, 2006; Demoussis & Giannakopoulos, 2006).

The Relationship Between Computer Experience and Computer Use

Generally, with most applications, the more experience that a person has utilizing that application especially, if they are successful in fulfilling a task, the more likely that person becomes confident in using that application, and the more likely that person will utilize that application more often and for more varied activities. This may be true for computer use and the Internet as well. Since the Internet contains an enormous amount of information, both factual and misleading, and provides the user with many services to complete a wide array of tasks, it is considered complex. A person's self-efficacy in carrying out a specific task using the Internet should have an effect on motivation to use the Internet. According to Albert Bandura (1994), "Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave" (p. 1). "Self-efficacy is not a measure of skill; rather, it reflects what individuals believe they can do with the skills they possess" (Easin & LaRose, 2000, p. 1). Although there are several ways to gain self-efficacy, successful experiences in carrying out a task is the most important (Bandura, 1994). Because the Internet can be difficult to use efficiently, past successes are important to motivate future use. Therefore experience appears to be an important potential factor in determining the various uses of the Internet.

To test the degree of perceived self-efficacy and its relationship to the frequency of Internet use, Matthew Eastin and Robert LaRose (2000) administered a survey to 171 undergraduate students in an introductory communications class at a single college. The operational measures of the study were previous Internet experience, Internet stress, Internet use and life stresses. The data analyses of the study suggests Internet self-efficacy was positively correlated with Internet use, past Internet experience and Internet expectations, while Internet stress and self-disparagement was negatively correlated. Prior Internet experience was the strongest predictor of Internet self-efficacy, suggesting that the more experienced one is at using the Internet, the more confident they become and the more they will use it. Eastin and LaRose (2000) pointed out that it takes about two years experience in using the Internet to become confident.

Cho et al. completed a study to determine how different patterns of Internet use relate to specific gratifications gained from these users within the context of the digital divide as defined by age and socioeconomic status. The data utilized were collected from 43,224 adults, age 18 years and older via telephone survey as part of the Pew Internet and American Life project in 2000. The results of their study suggest the younger users in the higher socioeconomic group were more likely to use the Internet for specific activities to purposively satisfy specific gratifications. Conversely, younger groups in the lower socioeconomic range and older Internet users were more likely to use multiple Internet behaviors to satisfy their needs. The results from this study suggest that the more experienced users are more efficient and purposeful in using the Internet to satisfy their needs. It suggests that their depth of experience using the Internet provided them with the

knowledge of what information and services are available and the best places to obtain the information and services needed to satisfy their particular need (Cho et al., 2003).

To further test perceived self-efficacy to the frequency of Internet use, Eastin (2005) used a questionnaire to obtain data from 236 high school students from the Midwest and Southwest United States. Sixty-three students came from the Midwest, while 173 students came from the Southwest. The three variables that were measured include information seeking, entertainment experience and social experience when using the Internet. All variables were measured using open-ended questions. Eastin's research findings suggest that prior experience using the Internet for social purposes and social group success was a significant predictor of using the Internet for social purposes. Eastin's data analyses also suggests that social group success and parental success in utilizing the Internet for information-seeking were greater predictors of developing information seeking self-efficacy on the Internet. Finally, prior experience and social group success were significant predictors of Internet use for entertainment purposes (Eastin, 2005). The study was a questionnaire; therefore, the data are self-reported. Also, all subjects came from junior and senior classes in a small area of the United States, so the data cannot be generalized to other areas.  However, this study is valuable in that it does suggest that there may be a relationship between self-efficacy and Internet use and that experience may be an important predictor of at least some aspects of Internet use.

A study by Joiner, Brosnan, Duffield, Gavin and Maras (2007) was executed to find out if there is a relationship between Internet anxiety, Internet identification and Internet use. Four different questionnaires were handed out at the end of a lecture. The questionnaire contained a section on student ownership of a computer, how old they were

when they first used the Internet, who showed them how to use the Internet, and four purposely designed scales—two that measure Internet use, an Internet anxiety scale and an Internet identification scale. Reliability of the newly developed questionnaires was measured using Cronbach alpha. The reliability of all questionnaires was at .77 or above, which is adequate. The population consisted of 446 students from the University of Bath and the University of Greenwich in the United Kingdom and Macquarie University in Australia. A total of 319 participants were female and only127 were male. The results of the data analyses suggest that the majority of students use the Internet between one and five hours per week. Some used the Internet over 30 hours per week while others used it six to ten hours per week. Only two students did not use the Internet. The most frequent use of the Internet was for shopping and e-mail. Very little Internet time was spent on academics. In general, the data suggests that Internet identification was positively related to time spent using the Internet and that males identified with the Internet and reported less anxiety using the Internet than women. The data suggests a positive relationship between Internet identification and Internet use, a negative relationship between Internet identification and Internet use, a negative relationship between Internet identification and Internet anxiety, and a negative relationship between Internet anxiety and Internet use. This study suggests that a person who is uncomfortable using the Internet will use it statistically significantly less than a person who is comfortable using the Internet. Conversely, a person who is experienced using the Internet will exhibit less anxiety when using the Internet, will identify with it more, and will use the Internet more often. This study suggests that Internet experience matters. The more a person becomes experienced using the Internet, the more likely they will use it more frequently. The problem with this

study is the sample was a convenience sample, and the data came from self-reported information. Also, the sample was disproportionately female, and females are more likely to show Internet anxiety (Joiner et al., 2007).

A more recent study by Mcilroy, Sadler and Boojawon (2007) aimed to find out if 1) computer phobia was still high among students, 2) if students with high computer phobia and low computer self-efficacy were less likely to use the university computer labs, 3) if computer experience in terms of successful completion of an introductory computer course and current home access to a computer was associated with positive attitude toward computers, and 4) if students' perceptions of their introductory experiences with computing (positive or negative) had a relationship to computer anxiety and self-efficacy. The sample was comprised of 363 students from Liverpool John Moores University. The sample was a convenience sample designed to incorporate a wide range of disciplines. The sample demographics included 261 females and 102 males. The research instrument consisted of three surveys: 1) the computer anxiety rating scale, 2) computer thoughts survey, and 3) the computer self-efficacy scale which contained questions concerning background characteristics and frequency of use of university computer facilities. The results of the data analyses suggest that students who did not successfully complete an introductory computer course, students who did not use computers at home, and students who had a negative introductory experience with computers exhibited higher computer anxiety and lower computer self-efficacy and were less likely to use the university computer facilities. Conversely, students who use computers regularly at home and who had a positive introductory experience to computers reported higher self-efficacy, lower computer anxiety, and were more likely to

use the university computer facilities. The study suggests that regular use and a positive introductory experience to computer technology made a difference in student self-efficacy and frequency of computer use (Mcilroy et al., 2007). The study population was a convenience sample from one university with a disproportionately high female enrollment. Therefore, it cannot be generalized to a larger population, and the results should be viewed with caution. The research, however, does coincide with Cho et al. (2003) and Eastin's (2005) studies in that experience appears to develop self-efficacy and that, in turn, leads to more frequent use. The findings of another study by Astrid Solvberg (2003) also suggests that the more students used the computer technology, the more comfortable they became with it, which increased their confidendence level in using it. Solvberg's study used eighth graders from one school, and it did not address frequency of use (Solvberg, 2003).

A report based on a telephone survey conducted in 2006 by Princeton Associates International as part of the Pew Internet and American Life project found that age and gender does make a difference when it pertains to Internet activity. The subjects were selected from a random digit sample of telephone numbers selected from telephone exchanges in the United States. The sample size was 4,001 adults 18 years and older with 2,822 Internet users. In general, the research findings suggest that the majority of the most active Internet users comprise 31% of American adults labeled the "Elite Tech Users". The report divided "Elite Tech Users" into four subgroups based on their use of the Internet and other technological gadgets such as cell phones. Over all, the average age of this group is 40 or younger. Although the majority of some of the subgroups in this "Elite Tech Users" group are female, the overall majority is male. Of the "Elite Tech

Users," the most active subgroup called "Omnivores" comprise 8% of the group and are mostly male with an average age of 28. Although members of the other subgroups in the "Elite Tech Users" create Web pages and use some of the other Web 2.0 applications, it is the "Omnivores" who are the most frequent users. Conversely, the group labeled "Few Tech Assets" comprised 49% of the population, were mostly female with an average age of over 47. A small percentage of the "few tech users" will occasionally utilize the interactive functions of the Internet. The remainder of the group possess little or none of the technology required for Internet use. Those that do have the technology do not regard it as important to their day-to-day activities with some even finding it annoying. It is also important to point out that the "Elite Tech Users" had an average of  nine to ten years experience using the technology, whereas the "middle-of-the-road tech users" had six to seven years experience, and the "Few Tech Assets" group had an average of only five years experience using the technology (Horrigan, 2007). To sum up the findings, almost half (49%) of the Internet users had an average of only five years experience using the Internet, the majority being female with an average age  of 49. The most active Internet users, comprising 31% of the population, had an average age of 28 with the overall majority being male. Although all of the most frequent Internets users utilize the Web 2.0 applications such as podcasts, blogs and wikis from time to time, it the most active 8% of that group that most frequently utilize the applications to create and remix content and post creative artifacts to the Internet.  Although the most active 8% is ethnically diverse, the majority are white males.

Men are more likely than women to post creative work on the Internet. Hargittai and Walejko (2008) surveyed 1,067 freshman enrolled in an urban public university

concerning their creative endeavors. A paper-and-pencil survey was given to avoid biases toward individuals who are less comfortable utilizing computers during February and March of 2007. The sample was a convenience sample, 44% male and 56% female. Specifically, the study wanted to find out if freshmen created videos, music, artistic photography, fiction and poetry and posted them online.  The study found that 41% of the sample did post some creative works online. In general, concerning posting creative works online, the study suggests that there was no significant difference in ethnicity, race or parental education, but there were differences in gender. Men were more likely than women to post their creative works online. Men were more likely to post their music and videos online, while women were more likely to post poetry and fiction than men. There was no significant difference in gender concerning posting artistic photography online. However, after controlling for skill in using the Internet, there was no longer a significant difference in gender. This suggests that skill in using the Internet makes a difference in who is more likely to post creative works on the Internet. The problem with this study is that the sample was a convenience sample taken from a single university. Although the study lacks external validity, it does suggest that students with fewer computer skills are less likely to post their creative works online and that women may be less skilled than men (Hargittai & Walejko, 2008).

Another study executed by Hargittai and Hinnant (2008) surveyed 18 to 26-year old Internet users to find out if there was a difference in the way young adults used the resources on the Internet.  Young adults age 18 to 26 were chosen because they are the age group that has the highest percentage of Internet users according to the Pew Internet and American Life project. The purpose of the study was to find out if people with higher

education levels, people who are comfortable using the technology, people with more experience using the Internet, and people who have high-speed Internet connections will more often use the Internet to access capital-enhancing sites such as job search sites that have potential to improve their social and or economic status than other users in the same age group. The research instrument was a telephone survey conducted by a national survey firm. The sample was pulled from a list of households of 18 to 26-year olds compiled by another firm from more than 3,200 original public and private sources, including the white pages and census information. Each household was screened for the number of 18 to 26-year olds, and the nearest birthday was used to randomly select a representative from an eligible household. The results of the study suggest that women are more likely to report lower digital literacy concerning the Internet. People who are allowed to surf the Internet freely at work and those who have Internet access at home report higher digital literacy skills concerning the Internet, and less frequent Internet users are less digitally literate concerning Internet terms. The study also suggests that users with higher education were more likely to visit capital-enhancing sites, those that are comfortable using the technology are slightly more likely to visit capital-enhancing sites, and self-reported higher levels of knowledge about the Internet was the highest predictor of those who visited capital-enhancing sites. Access to high-speed Internet connection did not make a difference. Based on the results of this study, the more educated a person is and/or the more experience one has using the Internet, the more likely they are to use it for capital-enhancing activities (Hargittai & Hinnant, 2008). The author points out that just because a person has Internet connection, does not mean that they know how to use it to their financial well-being. The problem with this study is that

the sample was limited to subjects who were 18 to 29 years of age, and the sample size of

270 is relatively small. Still, the research does suggest that experience using the Internet

is an important predictor for using the Internet for upward social mobility, and in that

regard, a digital divide does exist.

When looking at the digital divide, one must consider the broadband connection

as opposed to dial-up or as opposed to no connection at all. According to a report

published by the U.S. Department of Commerce, broadband connection to the Internet is

increasing while dial-up is decreasing (Watson et al., 2004). In rural areas, broadband

connection is less prevalent (Watson et al., 2004). "Although education is the strongest

predictor of broadband Internet use, access to broadband is a stronger predictor than all

demographics" (Matthews & Schrum, 2003, p. 3). Research suggests that consumers with

broadband connection at home are more likely to be daily Internet users and are more

likely to engage in a wider variety of online activities (Horrigan, 2008; Lebo, 2001;

Matthews & Schrum, 2003; "Online World," 2006; Watson et al., 2004).  Access to

broadband is an important consideration when examining the use of Web 2.0 applications

because as compared to dial-up, broadband is much faster. Tasks that require a large

amount of bandwidth, such as uploading graphic-intensive artifacts and multimedia files,

are too slow when using dial-up. Therefore, those using dial-up are less likely to engage

in those types of activities. With that in mind, it is important to consider who is most

likely to have broadband connection.

The Pew Internet and American Life project looks at the broadband adoption

trends and compares the 2006 data to the 2007 data. In 2006, 42% of adults reported

having home broadband connection. By 2007, 47% of adults reported having broadband

connection at home. Research suggests that adults who have home broadband connection are much more likely to go online than those who have dial-up connection. High-speed Internet adoption is more prevalent among young, educated and relatively well-off individuals, although in families with annual household incomes of less than $30,000, the study showed a 3% increase rate of broadband adoption in 2007 from the previous year. African-American adults have also experienced a rapid increase of broadband adoption in recent years from 31% in 2006 to 40% in 2007. The lower adoption of broadband Internet access among African-Americans is at least due in part to their lower-than-average income level and educational level. When comparing Caucasians and African-American families with similar demographics concerning broadband adoption, the rate was very similar. Persons living in rural areas continue to lag behind in broadband adoption partly because the service is not available. Latinos and Hispanics also lag behind in broadband connection mainly due to low Internet use among the populations (Horrigan & Smith, 2007). The data from this project came from the February-March 2007 survey of 2,200 adult Americans. Of the 2,220 adults, 1,492 were Internet users and 966 had home broadband Internet connection. Of the population, 190 were African-American, 111 of which were Internet users and 71 with home access to broadband. There were 1,740 Caucasians interviewed of which 1,199 were Internet users and 767 had home broadband connection. A total of 477 lived in rural areas of which 258 were Internet users and 133 had home broadband connection. The sample came from a random-digit sample of telephone numbers selected from telephone exchanges in the United States as part of the Pew Internet and American Life project (Horrigan & Smith, 2007).

A follow-up telephone interview conducted by Princeton Survey Research Associates International for the Pew Internet and American Life project found that broadband connection at home is increasing. From 2007 to 2008, the percentage increase was less among African-Americans and families with low incomes. In general, the population most likely to have access to broadband or high-speed Internet connection at home is male, although females are gaining in that area. The age of the population most likely to subscribe to high-speed or broadband Internet access at home is between 18 and 64. Only 43% of African-Americans, as compared to 56% of English-speaking Hispanics and 57% Caucasians, have broadband or high-speed Internet connection at home. It is also interesting to note that as income and education level increase, the percentage of people with broadband or high-speed Internet connection at home increases. Finally, populations living in rural areas are less likely to have broadband or high-speed Internet connection, partly because it is still not available in the area (Horrigan, 2008).

There is much research that addresses the digital divide, but since Web 2.0 applications are relatively new, there is limited research that specifically address who is most likely to post different types of creative works online using Web 2.0 applications and for what reasons. Still some of the digital divide research provides a glimpse of the trends concerning the use of Web 2.0 applications and the purpose of their use.

As stated earlier, the more experienced users are the users who are most likely to post creative work such as podcasts, blogs, and Web pages online (Hargittai & Walejko, 2008; Horrigan, 2007; Madden & Jones, 2008). Many of today's traditional college students will probably be familiar with and comfortable using the social-networking technology (Barnes, Marateo, & Ferris, 2007; "Online Social Networking," 2006). Being

adept at using the Web 2.0 social-networking applications, such as FaceBook, MySpace and instant messaging, should provide students with skill and self-confidence to quickly learn and utilize applications such as social bookmarking, collaborative suites, blogs and wikis. In fact the Pew Internet and American Life project found that 64% of online teens or 59% of all teens ages 12 to 17 have participated in content-creating activities on the Internet, such as blogging, creating and sharing videos, uploading and sharing photos, create their own Web pages, and remixing other Web content into creations of their own (Lenhart, Madden, Macgill, & Smith, 2007). According to Lenhart et al., female teens are most likely to create and post to blogs, whereas males are more likely to create and post videos online (Lenhart, Madden, Macgill, & Smith, 2007). Compared to the 2004 Pew Internet and American Life survey, more teens are participating in a wider variety of creative activities on the Internet. The data were collected in October and November of 2004 and again in November 2006 from a phone interview of parents and teens. Of the teens surveyed, the number of teens who participated in creative activities in 2004 was 548 and increased in 2006 to 572 (Lenhart et al., 2007). The 2008 Annenburg School of Communication Digital Futures project also found an increasing rate from previous years at which Internet users are posting information online in the form of photos, Web pages and blogs ("The 2008 digital future," 2008).

Blogging is a popular activity because it is easy and allows authors to be published. About 8% of Internet users (or 12 million American adults) are bloggers, while 39% (about 57 million American adults) read blogs (Lenhart & Fox, 2006). The figures represent an increase from 2005. Most bloggers are under the age of 30 and are evenly split between men and women. When compared to the entire Internet-using

population, a disproportionately high number of bloggers are African-American. Most bloggers blog as a hobby or personal journal, while only approximately one-third of bloggers view blogging as a form of journalism. The majority of bloggers have broadband connection, are heavy Internet users, and a large percentage post their creative work such as artwork, videos, photo and stories online. The sample was taken from a random-digit dial-tracking survey that was part of the Pew Internet and American Life project about Internet use among a nationally representative sample of American adults who were asked if they maintained a blog. The self-identified bloggers were called back to complete another telephone survey. The total sample size was only 233 adults (Lenhart & Fox, 2006). The sample was small because, compared to the entire sample of Internet users, only a small percentage blog.

Use of video-sharing sites have significantly increased between 2006 and 2007. In 2007, 48% of Internet users (up from 33% in 2006) reported visiting video-sharing sites. Of that 48%, 15% reported visiting a video-sharing site the day before, suggesting daily use. This trend is up from 8% in 2006. Although the increase occurred among all demographics, it is males between the age of 18 to 29 who are most likely to visit a video-sharing site. The increase is partly attributed to the increase of broadband and partly due to the increase number of videos posted to online video sites. The survey found that 22% of adults shoot their own video, but only about 14% of those adults post the videos online (Rainie, 2008). The data from this study were collected between October 24 and December 2, 2007, as part of the Pew Internet and American Life project and suggests that only a small percentage of Internet users post videos online.

The variety of activities a person engages in while on the Internet often depends on the type of Internet connection they have. One Pew Internet project memo suggests that podcast downloading continues to increase and that currently 19% of all Internet users up from 12% in 2006 download. This trend is occurring because more consumers are connected to broadband, and more consumers own gadgets such as MP3 players. As a result of the increased demand for podcasts, there is a wider variety of podcasts available to download. Currently, some periodicals such as newspapers and magazines are available in podcast format. When it comes to downloading podcasts, age, gender, experience using the Internet and broadband connection all make a difference. Men are more likely than women to download podcasts. Internet users between the ages of 18 to 29 years of age are more likely to download podcasts while Internet users over 50 are least likely to download podcasts. Individuals who have broadband connection at home, have six or more years experience using the Internet, and who are under 50 years of age are more likely to download a podcast than users 50 and older. This may be a result of the fact that younger people own gadgets such as MP3 players that play podcasts. Internet users with broadband Internet connections and Internet users with six or more years experience using the Internet are also more likely to download podcasts than users with five years or less experience. The memo suggests that downloading podcasts is not a typical daily activity of most Internet users. Only about 19% of Internet users download podcasts, and 17% of those who download podcasts do it on a daily basis. The findings are based on data collected during a telephone survey of adults 18 and older conducted by the Pew Internet and American Life project from April 8 through May 11, 2008. The total sample included 2,251 adults; however, the portion of the survey concerning podcasts

was administered to 1,553 Internet users (Madden & Jones, 2008). There was nothing in the memo concerning creating a podcast. However, if only 19% of Internet users download podcasts, it is highly unlikely that a large percentage of Internet users create podcasts since that requires more skill and equipment such as a microphone.

In summary, within the last 10 years, the Internet as evolved into a media outlet where users can not only search and retrieve information specifically catered to their needs, but also create and post information. A person with convenient access to Internet connection can utilize that resource to their advantage for upward mobility.  However, not everyone has convenient access to the technology, and not everyone who has convenient access to the technology possesses the skill and knowledge to use the technology to their financial advantage. Internet connection costs money, takes time to use, and one must possess the intelligence to comprehend and evaluate the information presented and the skill to utilize the applications available. As van Dijk and Hacker (2003) point out, there are four aspects of the digital divide: skills, possession of hardware and Internet connection, lack of computer anxiety, and opportunity for usage (van Dijk & Hacker, 2003). Those without convenient Internet access are disadvantaged because they lack easy access to online education, online job searches, health information, participation in online auctions, and the resources to market themselves online. Without convenient access to a computer and Internet connection, a person is less likely to be skilled in using the technology because of lack of experience and be more likely to exhibit some computer anxiety and less likely to expend energy to use the technology (Mcilroy, Sadler, & Boojawon, 2007).  Following is a summary of what

research suggests as to who is most likely to use the Internet and Web 2.0 applications with respect to the traditional constructs of the digital divide.

Gender makes a difference in Internet use in general and the use of Web 2.0 applications. Research suggests that males are more likely to have broadband connection (Horrigan, 2007; Jackson, Ervin, Gardner, & Schmidt, 2001). Males report more Internet self-efficacy and digital literacy skills than women (Hargittai & Hinnant, 2008; Jackson, Ervin, Gardner, & Schmidt, 2001).  The frequency of reported time spent using the Internet is mixed. Some research suggests that there is no significant difference in frequency of Internet use between males and females (DeBell & Chapman, 2006; Jackson, Ervin, Gardner, & Schmidt, 2001), while other research found that males report going online daily more than females (Demoussis & Giannakopoulos, 2006; Hargittai & Hinnant, 2008; Horrigan, 2007; Howard, Raine, & Jones, 2001). Men more often report doing more complicated tasks such as trading stocks and participating in online auctions, while women play games and seek jobs on line (Howard, Raine, & Jones, 2001). Research suggests that males are more likely to post their creative works online (Demoussis & Giannakopoulos, 2006; Hargittai & Walejko, 2008; Horrigan, 2007). However, controling for skill, Hargittai & Walejko found no difference (Hargittai & Walejko, 2008). Concerning creative works, men are more likely to post music and videos, whereas women are more likely to post fiction and poetry. There was no difference in the rate of uploading photos (Hargittai & Walejko, 2008). According to the Pew research, teen girls are more likely to post to blogs, while teen males are more likely to upload videos (Lenhart, Madden, Macgill, & Smith, 2007). However, concerning young adults 18 to 30 years of age, the bloggers are equally distributed among males and

females (Lenhart & Fox, 2006). Perhaps one reason females are less frequent Internet users is because they are less likely to have broadband connection at home.  If they do have it at home, often there may only be one computer and females have to compete with typically  more aggressive males for access.  In addition, females often have more domestic responsibilities than men. The mixed reporting of Internet use by females may be that females are reporting home access as much as males, but they still may not have as much time to use the technology. A possible reason why males report more digital literacy and do more complicated tasks online is because they have more experience using the Internet.

Race makes a difference in the use of the Internet and Web 2.0 applications. In general, more Caucasians than African-Americans and Hispanics go online (DeBell & Chapman, 2006; Howard, Raine, & Jones, 2001). More Caucasians and English-speaking Hispanics have broadband connections at home than African-Americans. Part of the difference can be attributed to the fact that on average, African-Americans have a lower-than-average income and educational level compared to the overall U.S. population. When comparing African-American families and Caucasian families with similar demographics, the difference in the rate of broadband connection dissapears (Horrigan & Smith, 2007; Horrigan, 2008). In terms of race, Hargittai & Walejko (2008) found no difference posting creative work online. It should be noted that their sample was freshman at a single university, and the findings cannot be generalized to the entire U.S. population. The Pew Internet and American Life research suggests that when compared to the entire Internet-using population, a disproportionately high percentage of African-American young adults blog (Lenhart & Fox, 2006).

Age makes a difference in Internet use and the use of Web 2.0 applications. In general, younger adults go online more often and engage in a wider variety of activities. They are more likely to do fun things like play games and download music and convenience activities like online banking and making travel arrangements (Howard, Raine, & Jones, 2001). The most active Internet users are 40 years old or younger.  Of that group, the most intense users are mostly male with an average age of 26 (Czerniewicz & Brown, 2006; Demoussis & Giannakopoulos, 2006; Horrigan, 2007). It is this most intense user group and are the most likely to utilize the Web 2.0 applications (Horrigan, 2007). Younger users are more efficient Internet users than older users (Cho et al., 2003).  Adults 18 to 64 years of age are the group that is most likely to have broadband connection (Horrigan, 2008).  Some of the reason for the age differences is that many younger adults grew up with the technology, and by the time they reached adulthood, they were comfortable with the technology and experienced users. Computer technology and the Internet can be very intimidating for someone with little or no experience, such as older adults, causing them to be more reluctant to use the technology.

Experience makes a difference in Internet use and the use of Web 2.0 applications. More males than females reported that they had home Internet access. More males report going online than females, and those who have been going online three years or longer are more likely to go online daily (Demoussis & Giannakopoulos, 2006; Howard, Raine, & Jones, 2001). More experienced users do more different tasks online (Howard, Raine, & Jones, 2001). There is a strong correlation between low Internet self-efficacy, low access and low use, and conversly a strong correlation between Internet self-efficacy and Internet use, suggesting that the more one uses the Internet, the more

one becomes comfortable using the Internet (Cho et al., 2003; Eastin & LaRose 2000; Joiner et al., 2007; Mcilroy, Sadler, & Boojawon, 2007). Males reported more self-efficacy concerning using the Internet, which make sense because they also report using the Internet more frequently (Jackson, Ervin, Gardner, & Schmidt, 2001; Joiner et al., 2007). Research also suggests that prior experience in using the Internet for social purposes is a strong prediction for using the Internet for social and entertainment purposes in the future (Eastin, 2005). More experienced users utilize the Internet more efficiently (Cho et al., 2003). Inexperienced users are less likely to visit capital-enhancing sites (Hargittai & Hinnant, 2008). More experienced users are more likely to post creative works online (Hargittai & Walejko, 2008). More experienced users are more likely to download podcasts (Madden & Jones, 2008). The most active Internet users are also the same consumers that are most likely to use Web 2.0 applications and have been online nine to 10 years. The middle-of-the-road users have been online an average of six to seven years, while the few tech users have been online about five years.  Just because a user has been online nine to 10 years does not mean that they utilize the Web 2.0 applications and post creative work online. In this regard, age matters. Horrigan describes a group of adults mostly 40 years of age who have been online regularly for nine years or more but are not interested in doing much more than surfing the Web (Horrigan, 2007). The frequency of reported visits to video-sharing sites and posting videos to video-sharing sites has increased between 2006 to 2007. The number of Internet users who reported keeping a blog and also the number reported reading and posting a comment to a blog has increased between 2004 and 2005, and the downloading of podcasts has also increased from 2006 to 2007 (Lenhart & Fox, 2006; Madden & Jones, 2008; Rainie,

2008). Part of this increase can be attributed to the increased adoption to broadband, but part of it may be attributed to overall increased experience using the Internet.

Broadband matters because those with broadband connection go online daily and engage in a wider variety of activities (Horrigan & Smith, 2007; Horrigan 2008; Lebo, 2001; Matthews & Schrum, 2003; Watson et al., 2004). There was no difference in the rate of visiting capital-enhancing sites between dial-up users and broadband users (Hargittai & Hinnant, 2008). The population most likely to have broadband connection at home tend to be more educated and between the age of 18 to 64. Many persons in rural areas do not have broadband connection because it is not yet available to them (Horrigan, 2008). Concerning Web 2.0 applications, the frequency of their use appears to be increasing, part of which can be attributed to the increase rate of broadband connection.

Connection Between Journalism, Motivation And the Digital Divide

Since the use of the newer Web 2.0 applications are increasingly utilized in most fields of journalism, it is important for journalism students to know about them and their potential use by the time they graduate from college. The students should be motivated to utilize them for personal integrative needs as well as cognitive needs. However, it takes some skills to use a computer and the Internet. A student who grew up with limited or no access to the Internet will be less skilled at using the Internet and less knowledgeable of the available applications and how to use them to their advantage. In fact, research suggests that the more experience students have using a computer, the more confident they become and the more likely they are to continually use them (Eastin, 2005; Mcilory et al., 2007). Research also suggests that computer anxiety is inversely related to computer experience (Mcilory et al., 2007). Finally, research results of a study conducted

at Northwestern University by Hargittai and Walejko suggests that men are more likely than women to post creative material online because men have more experience using the Internet than women (Hargittai & Walejko, 2008). Referring back to the digital divide, the students who are most likely to have the least experience using the Internet, and therefore likely to be least comfortable using the Web 2.0 applications, include students who grew up without home access to broadband connection or any connection at all, females, African-Americans and older students (DeBell & Chapman, 2006; Watson et al., 2004). Based on the research findings, students with limited experience using the Internet will be less motivated to utilize Web 2.0 applications for personal integrative and cognitive needs for various reasons such as computer anxiety, lack of skill, lack of broadband connection, and lack of knowledge of potential uses.

To date, little research has been published on the use of the newer Web 2.0 collaboration, resource sharing and publishing applications by mass communication and journalism students specifically for academic and integrative purposes. As the Internet has evolved into a new communication medium, there has been much research on Internet usage analyzing various demographics by reputable entities such the Pew Research Center and their Internet and American Life project, the Annenberg School of Communication with its Digital Future project, and the Kiaser Family Foundation. However, much of the research concerned teens and/or children online and the difference in gender usage or usage by age categories but very little on Internet usage by any college students specifically for academic and integrative purposes. Andrew Flanagin (2005) executed a study on college students' use of various types of communication, including instant messaging and e-mail, but did not target specifically educational purposes

(Flanagin, 2005). The Pew Research Center conducted a study on college students and Internet use and found that the majority of them use e-mail to communicate with professors, use the Internet more than the library and subscribe to academic listservs to engage in academic discussions related to their fields of study (Jones & Madden, 2002). Since that time, more powerful social-networking and collaboration technology have emerged. Jaakko Kurhila (2006) at the Asian Institute of Technology in Bangkok, Thailand, did a study on the unauthorized use of social software for academic purposes, but his sample size was very small and they were graduate students (Kurhila, 2006). A study by Denise Matthews and Lynne Schrum (2003) suggests that students use their computers and the Internet for academic purposes, but found that having broadband connection in college residences can be a source of distraction (Matthews & Schrum, 2003). Again, since this study, more powerful social-networking and collaboration applications have emerged. Most recently, a study conducted at Northwestern University suggests that men are more likely than women to post creative works online using some of the Web 2.0 applications because men are more experienced Internet users than women (Hargittai & Walejko, 2008).

The fact that students are majoring in mass communication and journalism, the fact that the Internet is a medium for mass media, and the fact that more commercial media entities are including a presence online, there is a strong possibility that these students would exhibit a heightened interest in the Internet and the Web 2.0 applications compared to other students. It would also be reasonable to think that these students would have a heightened desire to post creative work such as artistic photography, video clips, writing samples in blogs, etc., to showcase their skills since the commercial media

entities are using the same technology. In addition, it would be reasonable to assume that students would want to utilize some of the applications to aid them in their academic endeavors if for no other reason than to gain experience using the applications. However, because some of the students grew up without Internet access at home for various reasons, or grew up in a rural area where broadband is not available, some journalism students may not have the experience or skill to use the Web 2.0 applications to their advantage. Many of the applications are very new and, therefore, some students may be unaware that they exist.

CHAPTER III

METHODOLOGY

The purpose of this study is to find out if undergraduate students are utilizing the Web 2.0 applications in question. If in fact the students are utilizing the application, are they utilizing them for academic and personal integrative purposes? A second purpose of the study is to find out if students majoring in mass communication and journalism are utilizing the applications more frequently than students majoring in other disciplines. If mass communication and journalism students are utilizing the applications, are they utilizing them for academic and personal integrative purposes more than students majoring in other disciplines? The third purpose of this study is to find out if the specific constructs of gender, ethnicity, age, previous experience, and home access to a broadband connection often associated with the digital divide make a difference in the frequency of the Web 2.0 applications. Do the same constructs also make a difference in the frequency of use of the applications for academic and integrative purposes? To answer the questions, the survey research method was employed.

Research Questions

When predicting what students are most likely to use the publishing, resource-sharing or collaborative applications of the Internet, some of the items to consider are gender, ethnicity, age, length of time one had home access to an Internet connection and convenient access to a broadband connection, since they are all constructs associated with the digital divide. Research suggests that the more a student utilizes technology, the more confident they become and the more likely they will use the technology for a wider

variety of uses. Conversely, if a student is not comfortable using a technology, they are less likely to use it (Burke, 2001; Mcilory et al., 2007). Research also suggests that computer anxiety is inversely related to computer use (Mcilory et al., 2007). Theoretically, media choice lies with the consumer and one type of media competes with alternatives media sources to satisfying a particular need. If a student is not comfortable utilizing a media, they will find an alternative way to achieve their needs (Katz, Blumler, & Gurevitch, 1974; Rubin, 2002). Therefore, it is likely that a student with less experience using a computer and the Internet as a result of one or more constructs associated with the digital divide will be less likely to utilize the Web 2.0 applications partially because they are unaware of the applications and their potential use for education and partly because of the lack of self-efficacy in utilizing the technology.

The first purpose of this research is to find out if college students are using Web 2.0 applications and if so, are they utilizing them for academic and personal integrative purposes.

**RQ[1] Do undergraduate college students in general use Web 2.0 applications?**

**RQ[2] Do undergraduate college students in general use Web 2.0 applications for cognitive and personal integrative purposes?**

Since many of the Web 2.0 applications are communication and/or collaboration applications, while others are used to create media artifacts such as blogs, Web pages, video, audio and artistic photography for mass consumption, and since the applications are used in the media industry, it would make sense that students majoring in mass communication and journalism utilize the applications more than students in other majors. A second purpose of this research is to find out if students majoring in mass communication and journalism use the Web 2.0 applications more than non-mass

communication and journalism majors. Although there is some research pertaining to the individual use of Web 2.0 applications, no research was found that specifically targets mass communication college students and other college students for the purpose of academic and personal integrative purposes. With this in mind, the research questions are posed.

> **RQ[3] Do students majoring in mass communication and journalism use Web 2.0 applications more frequently than students not majoring in mass communication and journalism?**

> **RQ[4] Do students majoring in mass communication and journalism use Web 2.0 applications for cognitive and personal integrative purposes more that students not majoring in mass communication and journalism?**

Although the more recent research suggests that women are increasing their utilization of Internet technology, past research suggest that males are more experienced and comfortable using the technology (Burke, 2001; DeBell & Chapman, 2006; Howard et al., 2001; "Online World," 2006). Since more males than females have been using the Internet longer and are more experienced utilizing the technology, it would be reasonable to assume that males will be more likely to utilize the technology. With the exception of blogging and posting photos online, recent research of Hargittai and Walejko (2008) and Horrigan (2007) suggests that males under the age of 40 are most likely to post their creative work online. Other research suggests that females are more likely than males to blog (Lenhart et al, 2007) and that there is no difference in gender concerning posting photos online (Hargittai & Walejko, 2008). Since the findings in the literature are mixed, the following research questions concerning gender are posed:

**RQ[5] Does gender make a difference in the overall frequency of the use of Web 2.0 applications?**

**RQ[6] Does gender make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

Research also suggest that the most avid computer users are Caucasian males and that, in general, members of the Caucasian race will have more experience using computers and the Internet than African-Americans. One possible reason for this trend is lower parental educational level and lack of financial resources among the African-American population. According the U.S. Census Bureau Statistical Abstract (2007), a higher percentage of black laborers have less than a high school or college degree than Caucasians, and, on average, the black population has a lower income than the Caucasian population. As stated earlier, low-income families and families with a head of household who has less than a high school education are less likely to have computer and Internet access at home (DeBell & Chapmann, 2006; Howard et al., 2001; Lenhart et al., 2005; Madigan & Goodfellow, 2005; Oblinger & Oblinger, 2005; Roberts et al., 2005) Although on average, African-Americans have less experience using the technology than Caucasians; this trend appears to be changing (Fallows, 2005; Watson et al., 2004). Despite the evidence of the changing trend, with the exception of blogging, the recent research suggests that Caucasians are more likely to post their creative work on line than African-Americans (Horrigan, 2007). Other research suggests that after controlling for experience, there was no difference in ethnicity concerning posting creative work online (Hargittai & Walejko, 2008). Still other research suggests that bloggers are disproportionately African-Americans (Lenhart & Fox, 2006). Since the research is mixed concerning ethnicity, the following research questions are posed.

**RQ[7] Does ethnicity make a difference in the overall frequency of the use of Web 2.0 applications?**

**RQ[8] Does ethnicity make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

Research suggests that 87% of U.S. teens use the Internet as opposed to 66% of adults (Lenhart et al., 2005). The first IBM PC debuted in 1981 and began appearing in homes as a common item around 1985, while the Internet became accessible to the public in the early 1990s ("Triumph of the Nerds," n.d.). Because of the newness of the technology, nontraditional students did not grow up with home access to computers as some of the younger students did and, therefore, may not be as comfortable using a computer and the Internet. Approximately 32% of technology users with a median age between 28 and 40 frequently use the Internet and its communication capabilities (Horrigan, 2007). However, a large number of college undergraduates are nontraditional female students. Many of them are working full time with children, and some are single parents (Oblinger & Oblinger, 2005). These students may be struggling financially. Because of the lack of time and financial resources, they will be more likely to have less experience and are, therefore, less comfortable in using the computer and Internet technology. In fact, research suggests that the older students are, the less likely they are to be comfortable using online discussion applications and computer networks (Garcia & Qin, 2007). According to Lenhart et al. (2005) and Oblinger and Oblinger (2005), 74% of teens use instant messaging as a major communication application compared to only 44% of online adults. Based on this research, it appears that younger students have more experience using the Internet and, therefore, are more likely to utilize the Web 2.0 applications than older students over the age of 40 (Howard et al., 2001). Older persons

over the age of 40 are less likely to have grown up with a computer and Itnernet

technology, and to them the technology can be very intimidating. Because it is difficult to

find students over the age of 40, for the purpose of this study, the age groups are

categorized into two groups: 18-20 year old students labeled traditional and 21-65 year

old students labeled nontraditional students. Since there are a large number of students in

the age group of 21-65 who are under the age of 40 it is difficult to predict if the younger

students will utilize the Web 2.0 applications more frequently.  Therefore, the following

research questions are posed concerning age.

**RQ[9] Does age make a difference in the overall frequency of the use of Web 2.0 applications?**

**RQ[10] Does age make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

Just because a student is under the age of 26 does not mean that they grew up in a

home where a computer and Internet access was readily available. Research suggests that

students who did not utilize regular home use of computer technology and the Internet

will be less knowledgeable about the technology and less comfortable utilizing it for any

purposes (Mcilory et al., 2007). Other research suggests a negative relationship between

Internet anxiety and Internet use (Joiner et al., 2007).  However in recent times, the use of

the Internet technology is becoming more prevalent as a result of better Internet

infrastructure and more affordable technology. In addition, computer and Internet access

is available at schools and public libraries. As a result, students who have not had home

Internet connect for at least five years may have gained experience at school, libraries or

Internet café. Since it is difficult to predict if students in the sample population who did

not have a home Internet connect for greater than five years will utilize the Web 2.0

applications less frequently, the following research questions are posed.

**RQ[11] Do students who had access to the Internet in their home greater than five years prior to entering college utilize Web 2.0 applications more frequently than students who had Internet connection in their home for five years or less?**

**RQ[12] Do students who have had access to the Internet in their home for greater than five years prior to entering college utilize Web 2.0 applications for cognitive and personal integrative purposes more than students who had Internet connection in their home for five years or less?**

Another factor that may affect the utilization of the Internet and Web 2.0

applications for academic purposes is access to broadband Internet connection. Most

college campuses provide broadband Internet access to their students while on campus.

However, not all students live on campus. In rural areas, broadband connection is less

prevalent (Watson et al., 2004). Broadband Internet connection is important because

research suggests that consumers with broadband connection at home are more likely to

be daily Internet users and are more likely to engage in a wider variety of online activities

(Matthews & Schrum, 2003; "Online World," 2006; Watson et al., 2004). Because it is

likely that many of the subjects in the study live on campus where broadband is readily

available, it is difficult to predict if students without home broadband Internet connection

will utilize the Web 2.0 applications less frequently than students who have convenient

broadband connection at home. Concerning broadband connection and the use of the

Web 2.0 applications, the following research questions are posed.

**RQ[13] Do students with broadband Internet connection at home utilize Web 2.0 applications more frequently than students with a dial-up connection?**

**RQ[14] Do students with broadband Internet connection at home utilize Web 2.0 applications for cognitive and personal integrative purposes more than students with a dial-up connection?**

Research Design

To answer the research questions, a survey instrument was developed. The validity of the survey was determined utilizing the test and retest method. After the survey was developed, the researcher attended several undergraduate level classes over two semesters to administer the survey. The survey took about 15 minutes to complete and all of the participants filled out the survey at the beginning of class. The participation was voluntary and the students received no compensation for participation. All of the data collected were self reported. In order to get enough students majoring in mass communication and journalism, the survey was given to four entry level mass communication class over two semesters. After the data were collected, the data were analyzed using frequency analyses for research questions 1 and 2 and an independent sample t test for research questions 3 through 14.

Concerning research questions one and two, there were no dependent or independent variables since the questions aspired to find out how many members of the sample populations are utilizing the Web 2.0 applications. If the students were utilizing the Web 2.0 applications, were they utilizing them for academic and personal integrative purposes?

The three dependent variables for research questions 3 through 14 were use of Web 2.0 applications in general, the use of Web 2.0 applications for academic purposes and the use of Web 2.0 applications for personal integrative purposes. The independent variable for research questions 3 and 4 was subject's discipline major (mass

communication and journalism major or other). The independent variable for research questions 5 and 6 was gender. The independent variable for research questions s7 and 8 was ethnicity. The independent variable for research questions 9 and 10 was age. The independent variable for research questions 11 and 12 was previous experience utilizing the Internet technology and the independent variable for questions 13 and 14 was home access to broadband connection.

Participants

The population of the study was students enrolled in lower level courses at one four year college in the Southeastern part of the United States. Compared to the national average, the college where the subjects were enrolled had a higher than average African-American student population ("Enrollment Fact Book 2008/2009," 2009; U.S. Census Bureau Statistical Abstract, 2007). The, the mean household income of the population of the state in which college is located is lower than the national average. In fact, the average household income is lower in the state in which the college is located than the majority of other states in the union (U.S. Census Bureau Statistical Abstract, 2007). In 2003, the state in which the college is located was the only state in the union where less than 50% of the population used the Internet (Watson et al., 2004).

The population itself was comprised of 201 students of which 83 (41.3%) were male while the remaining 118 (58.7%) were female. Of the 201 students, 119 (59.2%) were traditional students age 18 to 20 while 82 (40.8%) were 21 years of age or older and were considered nontraditional. Concerning ethnicity, 122 (60.7%) were Caucasian, 68 (33.8%) were African-American and 11 (5.5%) considered themselves other. Although there was a majority of Caucasians and females in the sample population, the

demographics of the overall sample is similar to the overall student body population of the university. According to the university 2008-09 Fact Book, the student population was comprised of approximately 30% African-American, 70 % Caucasian, almost 60% females and 40% males ("Enrollment Fact Book 2008/2009," 2009). Of the sample population, one hundred (49.8%) students indicated that they were majoring in mass communication and journalism, 93 (46.3%) students were not mass communication majors, and the remaining eight (4.0%) were undecided. One hundred eighty-eight (93%) subjects had access to a computer with Internet connection at home, and 132 (66%) have had such home access for greater than five years. Concerning the connection type, the majority of the population at 167 (83%) had a broadband connection, 11 (5.5%) subjects had dial-up, nine (4.5%) students indicated they did not know or chose "other," while 14 (7%) students did not have access to the Internet at home.

<p align="center">The Research Instrument</p>

Upon reviewing previous Internet use studies, it was determined that much of the data are self-reported and collected by a survey instrument of some sort. The survey method was used as early as the late 19th century in France where data were collected from mining families and also in London by Charles Booth who studied the poor residents. In 1920, the survey method became more systematic and formalized. By the early 1940s, the survey method was widely accepted and utilized in a famous study conducted by Paul Lazarsfeld, Bernard Berelson and Hazel Gaudet titled *The People's Choice*. The purpose of the study was to determine why people voted the way they did (Lowery & DeFleur, 1995).  According to Lowery and DeFleur (1995), "survey research has proven to be one of the most significant contributions of the social sciences to the

study of human behavior in the 20<sup>th</sup> century" (p. 72).  More recently, a study by Hanjung

Ko (2000) used a survey to determine Internet users' motivation, their attitudes toward

the Internet, as well as the types of Web sites they visited. The sample included 185

college students. Another study by Angleman (2000) used a survey to determine Internet

user profiles and gratifications received (Angleman, 2000). A third study by Sun, Rubin

and Haridakis (2006) utilized a survey to determine the role of motivation and media

involvement in explaining Internet dependency. The Pew Internet and American Life

project is an on-going research project to determine how the Internet is affecting

American's daily lives. Specifically, Lenhart and Madden (2007) conducted a study to

find out why social-networking sites are so popular with teens. What needs do

participating in Internet social-networking sites satisfy?  Much of the Pew research

project is a telephone survey.  Flanagin (2005) used a Web-based questionnaire to find

out what needs instant messaging fulfills for college students and grounded his study in

the uses and gratification paradigm (Flanagin, 2005). Based on previous studies, it was

determined that a survey would be appropriate for this study as well.

In general, the Internet is relatively new, available to the general public since the

early 1990s. Because of this, there is not an abundance of research studies concerning the

Internet and the motivation for use.  Furthermore, the Web 2.0 applications are even

newer, most of them coming into existence within the last three to five years. Because the

applications are new and there is little research concerning the use of Web 2.0

applications for academic and integrative purposes, it was difficult to find an existing

survey that would provide data to test the hypothesis. As a result, a unique survey

instrument was developed by the researcher.

To avoid a bias against students who are not comfortable utilizing the technology, it was decided that a paper and pencil survey would be more appropriate than a computer survey. Several surveys that had been previously used for similar studies were viewed and used as a model in developing the research instrument. A few of the questions concerning broadband connection were taken directly from the Pew Internet and American Life Parent & Teen 2004 phone survey ("Parent & Teen," 2004). The remaining questions were written by the researcher.

The survey instrument consisted of 40 questions and was divided into three parts. The first part consisted of questions 1 through 8 and solicited information concerning demographics such as gender, age, ethnicity, if majoring in mass communication and journalism, type of home Internet connection as well as the length of time that home Internet connection was available to them. The purpose of part one was to determine the demographics of the sample population. The second part of the survey questions 9 through 24 solicits information on the use of the Web 2.0 applications. Specifically, questions 9, 11, 13, 15, 17, 19, 21, and 23 ask if a subject used any of the Web 2.0 applications in the first place and the purpose of the questions was to answer research question 1. Questions 10, 12, 14,16, 18, 20, 22, and 24 solicited information concerning the frequency of use in general for each of the Web 2.0 applications and was designed to answer research questions 3, 5, 7, 9, 11, and 13. The third part of the survey questions 24 through 40 was designed to solicit information concerning frequency of use of the Web 2.0 applications for academic and personal Integrative purposes. Specifically, questions 25, 27, 29, 31, 33, 35, 37 and 39 solicited frequency of use for academic purposes and questions 26, 28, 30, 32, 34, 36, 38 and 40 solicited frequency of use for personal

integrative purposes. The function of the third part of the survey (questions 25 through 40) was to answer research questions 4, 6, 8, 10, 12 and 14.  See Appendix A for a copy of the survey.

Before any surveys were administered, the study and survey was reviewed and approved by the University Human Subjects Review Board. To test the survey for reliability, the test-and-retest method was used. The survey was pilot-tested the semester before any data were collected by administering it to a representative group of 12 students enrolled in a lower level business education class. The population was a convenience sample deemed to be similar to the target population of the study. Three weeks later, the survey was administered again to the same group of students. The results were analyzed using a chi square analyses for each question to determine the percent of variance in the consistency of response for each question. Next, an overall percent variance of the survey was determined by averaging the percent variance in consistency of response for all of the questions. The survey tested out to be an average of 74% reliable. Since the acceptable rate of reliability for a research project is 70% or above, the survey was deemed reliable.

<div align="center">Sampling and Data Collection</div>

The population of the study is comprised of a sample of students from a single university in the Southeastern part of the United States. Data were collected from four classes comprised of two different entry-level mass communication and journalism classes over two semesters. Some of the same students were enrolled in both mass communication classes.  To avoid multiple responses from the same student, the students were instructed by the researcher not to fill out the survey if they have already filled it out

once. The survey was strictly voluntary, and there was no incentive offered to the

students for completing the survey. The students were instructed as such. All data were

collected at the beginning of each class. Although the students who were present during

the request for participation were not physically counted, the response rate was

approximately 45%. After analyses of the data, it was determined that there was not a

large enough sample, too many mass communication and journalism majors and not a

representative sample of minorities and also of nontraditional students. In an effort to

obtain a representative sample of non mass communication majors, minorities and

nontraditional students, the survey was administered to other students not necessarily

enrolled in mass communication and journalism strategically targeting minority and

nontraditional students. The strategic data collection was done by surveying all students

who chose to participate in the study in three other non-mass communication and

journalism classes and then utilizing only data from minority and nontraditional students.

Since the strategic data collection took place in non mass communication and journalism

classes, the majority of participants were not mass communication majors and the non

mass communication population number required to obtain a representative sample was

achieved without strategic elimination. Specifically, during the strategic data collection,

the students were recruited in the same manner as the mass communication students only

they came from one lower level instructional technology class, one lower level business

education class and one lower level history class.

## Limitations

There are imperfections in all research endeavors and the current research

endeavor is no exception to the rule. Most importantly, because the sample was a

convenience sample and all of the students came from a single university, the study will have no external validity. However, if findings coincide with similar studies, a pattern will begin to emerge. Secondly, the research method was by use of a survey instrument, so all of the data were self reported. There are many confounding variables such as the participant may not have been feeling well that day, the respondent might over estimated their use of Web 2.0 applications, responded in a manner they though the researcher wanted them to or in a manner that would make them look good that can affect the data collection. Third, since some students were enrolled in two of the classes where the data were collected, they may have completed the survey twice even though they were instructed not to. Fourth, the sample population was a convenience sample and not randomly selected. Finally, some of the participants from the non mass communication and journalism classes were eliminated from the sample population because of their traditional and non minority ethnicity status to obtain a representative number of minority and nontraditional students. The strategic elimination of participants in the non mass communication and journalism classes could have caused an over representation of non minorities in the mass communication and journalism group.

<div align="center">Data Analyses</div>

To answer the research questions, all of the data were entered into SPSS Statistical Analysis software. For questions 1 through 6 reflecting the demographics, the items were categorized into groups and the specific group such as "male" or "female" was selected according to the participant's response. For item 7 "how long have you had access to a computer with Internet connection at home" the responses were divided into two groups, those who indicated that they had the home connection for greater than five

years and those who responded that they had the home connection for five years or less.

This particular grouping was chosen because some research suggests that Internet users

with less than five years experience using the Internet use fewer applications. For

question 8t, the participants had the option of choosing "dial-up", "DSL", "cable

modem", "wireless", "T-1 fiber optic connection", "other" or "don't know". For the

purpose of this study the connection type was divided into four groups. "Dial-up" was

one group, "other" was a second group, "don't know" was a third group and "DSL",

"cable modem", "wireless", and "T-1 fiber optic connection" were grouped into a fourth

group and coded as "broadband". Questions 9, 11, 13, 15, 17, and 19, were simple yes

and no questions and were coded 1 = "no" and 2 = "yes". Questions 10, 12, 14, 16, 18,

20, 22, and 24 were designed to find out how frequently the participants utilized a

specific Web 2.0 application. The choices were essentially "I don't use", "I have used

only once", "few times a year" meaning less than monthly, "monthly", "twice a month"

and "weekly". In SPSS the responses were coded as 0 = Never, 1= "I have used only

once", 2 = "few times a year", 3 = "monthly", 4 = "twice a month" and 5 = "weekly".

Questions 25 through 40 ask participants how often they used a specific Web 2.0

application for academic and personal integrative purposes. The choices were "Never",

"Rarely", "Sometimes", "Often" and "Always. In SPSS the responses were coded as 1 =

"Never" 2 = "Rarely", 3 = "Sometimes", 4 = "Often" and 5 = "Always.

Several data analyses were run during the process of the current research project.

First a frequency analyses were run on survey questions 1 through 8 to determine the

demographics of the sample population. Research question 1 was answered by running

frequency analyses on survey questions 9, 11, 13, 15, 17, and 19. To answer research

question 2 frequency analyses were run on survey questions 10, 12, 14, 16, 18, 20, 22, and 24. The frequency analyses were chosen for research questions 1 and 2 to determine the demographics of the population because only a simple count was needed to answer the questions. For research questions 3, 5, 7, 9, 11, and 13, an independent sample t test was ran separately on survey questions 10, 12, 14, 16, 18, 20, 22, and 24. To answer research questions 4, 6, 8, 10, 12 and 14, two separate independent sample t tests were run on each question, one for academic needs and one for personal integrative needs. For academic needs the independent sample t tests was run on survey questions 25, 27, 29, 31, 33, 35, 37, and 39. For personal integrative needs the independent sample t tests was run on survey questions 26, 28, 30, 32, 34, 36, 38, and 40. For all of the independent sample t tests, because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error. The independent sample t test was chosen because only two means were compared for each analyses and the means were not compared to an entire population. Since n is greater than 30, it can be assumed that the distribution is normal. Still haven't listed the variables and categorized them as independent variables or dependent variables.

<div align="center">Independent and Dependent Variables</div>

Quantitative studies typically have both independent variables and dependent variables. A variable is considered an independent variable if it has an effect on another variable usually known as the dependent variable. For the purpose of the current study, the independent variables are gender, ethnicity, age, academic major (mass communication and journalism majors or other discipline), home access to a broadband connection and previous experience using the Internet technology. All of the

aforementioned variables are independent variables because the study aspires to find out

if the variables make a difference in the frequency of use of the Web 2.0 applications in

general and if they make a difference in the frequency of use of the Web 2.0 applications

for academic and also personal integrative purposes. A variable is considered a dependent

variable if something causes the variable to change. For this study there are three

dependent variables, the frequency of use of Web 2.0 applications, the frequency of the

use of Web 2.0 applications for academic purposes, and the frequency of use of Web 2.0

applications for personal integrative purposes.  They are considered dependent variables

because the study aspires to find out if gender, ethnicity, age, academic major, home

accesses to a broadband connection and previous experience using Internet technology

affects the frequency of use of the Web 2.0 applications.

CHAPTER IV

RESULTS

Upon completion of the survey administration, SPSS statistical analysis software was employed to analyze the data. All data were entered into SPSS by the researcher. All statistical tests and interpretation of the data analyses were completed by the researcher under the guidance of the statistical expert on the committee.

The population was a convenience sample that was recruited from seven different undergraduate classes. Although the students who were present during the request for participation were not physically counted, the response rate was approximately 45%. To determine the population of the sample, frequency analyses were run on the data collected. The total number of participants in the population equaled 201. The frequency analyses revealed that the sample population in terms of gender, ethnicity and age was representative of the university population from which the participants were recruited. The population of mass communication and journalism majors and students majoring in other disciplines was approximately equal, The results of the frequency analyses of the population are reflected in Table 1.

Table 1

*Demographics*

| Demographics | N = 201 n (%) |
|---|---|
| **Gender** | |
| Male | 83 (41.3%) |
| Female | 118 (58.7%) |
| **Age** | |
| 18-20 | 119 (59.2%) |
| 21-65 | 82 (40.8%) |
| **Ethnicity** | |
| Caucasian | 122 (60.7%) |
| African-American | 68 (33.8%) |
| Other | 11 (5.5%) |
| **Mass Communication Major** | |
| Yes | 100 (49.8%) |
| No | 93 (46.3%) |
| Undecided | 8 (4.0%) |
| **Home Internet Access Time Period** | |
| No Home Internet Access | 13 (6.5%) |
| Did Not Specify | 15 (7.5%) |
| Five Years Or Less | 41 (20.5%) |
| Greater Than Five Years | 132 (65.5%) |
| **Internet Connection Type** | |
| Broadband | 167 (83.0%) |
| Dial-up | 11 (5.5%) |
| Other Or Don't Know | 9 (4.5%) |
| No Home Internet Access | 14 (7.0%) |

Specifically, the frequency analyses revealed that the sample was comprised of 201 students of which 83 (41.3%) were male while the remaining 118 (58.7%) were female. Of the 201 students, 119 (59.2%) were traditional students age 18 to 20 while 82 (40.8%) were 21 years of age or older and were considered nontraditional. Concerning ethnicity, 122 (60.7%) were Caucasian, 68 (33.8%) were African-American and 11 (5.5%) considered themselves other. One hundred (49.8%) students indicated that they were majoring in mass communication and journalism, 93 (46.3%) students were not mass communication majors, and the remaining eight (4.0%) were undecided. One hundred eighty-eight (93%) subjects had access to a computer with Internet connection at home, and 132 (66%) have had such home access for greater than five years. The majority of the population at 167 (83%) had a broadband connection, 11 (5.5%) subjects had dial-up, nine (4.5%) students indicated they did not know or chose "other," while 14 (7%) students did not have access to the Internet at home.

The first purpose of the research project was to find out if students are using Web 2.0 applications. This purpose is reflected in research question 1 below.

**RQ[1] Do undergraduate college students in general use Web 2.0 applications?**

The specific applications in question are photo sharing, creating podcasts, uploading videos and creating blogs, Web pages, wikis, utilizing social bookmarking and collaboration suites. A user was a person who selected "yes' to survey questions 9, 11, 13, 15, 17, 19, 21 and 23 and a non user selected "no". To find out the overall use of the Web 2.0 applications by the sample population, frequency analyses were run on the above mentioned survey questions. The result of the frequency analyses is reflected in Table 2.

Table 2

*Use of Applications*

| Applications | Yes<br>n (%) | No<br>n (%) |
|---|---|---|
| Photo Upload | 144 (71.6%) | 57 (28.4%) |
| Create Podcasts | 15 (7.5%) | 186 (92.5%) |
| Video Upload | 86 (42.8%) | 115 (57.2%) |
| Blog | 102 (50.7%) | 99 (49.3%) |
| Web page Creation | 104 (51.7%) | 97 (48.3%) |
| Wiki Use | 27 (13.4%) | 174 (86.6%) |
| Social Bookmark Use | 45 (22.4%) | 156 (77.6%) |
| Collaboration Suite Use | 29 (14.4%) | 172 (85.6%) |

Just because students said that they used an application in question does not mean that they use them on a regular basis. For example, a student could build a Web page or Web site in a class for a grade or on his/her own, just to learn the process and then never use it again. To obtain a complete picture of the overall use of the Web 2.0 applications by the sample population, an analyses of the frequency of use was run. Table 3 reflects the frequency of use of each application analyzed.

Table 3

*Frequency of Use*

| Application | Weekly n (%) | Twice a Month n (%) | Once a Month n (%) | Few Times a Year n (%) | Once n (%) | Never n (%) |
|---|---|---|---|---|---|---|
| Photo Upload | 27 (13.4%) | 35  (17.4%) | 33 (16.4%) | 56 (27.9%) | 11 (5.5%) | 39 (19.4) |
| Podcast Creation | 0 (0.0%) | 0 (0.0%) | 2 (1.0%) | 8 (4.0%) | 5 (2.5%) | 186 (92.5%) |
| Upload Videos | 4 (2.0%) | 4 (2.0%) | 8 (4%) | 47 (23.4%) | 25 (12.4%) | 113 (56.2%) |
| Blog | 16 (8.0%) | 7 (3.5%) | 14 (7.0%) | 35 (17.4%) | 27 (13.4%) | 102 (50.7%) |
| Web page Update | 30 (14.9%) | 8 (4.0%) | 15 (7.5%) | 13 (6.5%) | 37 (18.4%) | 98 (48.8%) |
| Wiki Use | 4 (2.0%) | 5 (2.5%) | 5 (2.5%) | 7 (3.5%) | 6 (3.0%) | 174 (86.6%) |
| Social Bookmark Use | 16 (8.0%) | 8 (4.0%) | 7 (3.5%) | 8 (4.0%) | 7 (3.5%) | 155 (77.1%) |
| Collaboration Suite Use | 13 (6.5%) | 4 (2.0%) | 6 (3.0%) | 5 (2.5%) | 3 (1.5%) | 170 (84.6%) |

All of the Web 2.0 applications can be used for other purposes such as to pass time or to stay in contact with family and friends as well as being employed for academic and personal integrative purposes which have the greatest potential of enhances ones chances for upward social mobility. As reflected in research question 2 below, the study aspires to find out if the students that are using the Web 2.0 applications, are they using them to their academic and professional advantage?

**RQ[2]  Do undergraduate college students in general use Web 2.0 applications for cognitive and personal integrative purposes?**

To answer research question 2, frequency analyses were run. The first analyses aspired to find out if students were using the Web 2.0 applications for academic purposes while the second analyses were run to determine if students are using the application for

personal integrative purposes. The first frequency analyses was run on survey questions

25, 27, 29, 31, 33, 35, 37 and 39 to find out how frequently the applications are being

employed for academic purposes. Table 4 below summarizes the findings of the

frequency analyses for academic purposes.

Table 4

*Academic Use of Web 2.0 Applications*

|  | Always | Often | Sometimes | Rarely | Never |
|---|---|---|---|---|---|
|  | n (%) | n (%) | n (%) | n (%) | n (%) |
| Photo Upload | 3 (1.5%) | 15 (7.5%) | 35 (17.4%) | 38 (18.9%) | 110 (54.7%) |
| Podcast Creation | 1 (0.5%) | 2 (1.0%) | 9 (4.5%) | 13 (6.5%) | 176 (87.6%) |
| Upload Videos | 4 (2.0%) | 8 (4.0%) | 12 (6.0%) | 14 (7.0%) | 162 (80.6%) |
| Blog | 2 (1.0%) | 10 (5.0%) | 14 (7.0%) | 23 (11.4%) | 151 (75.1%) |
| Web page Update | 4 (2.0%) | 4 (2.0%) | 12 (6.0%) | 27 (13.4%) | 154 (76.6%) |
| Wiki Use | 3 (1.5%) | 5 (2.5%) | 12 (6.0%) | 7 (3.5%) | 174 (86.6%) |
| Social Bookmark Use | 6 (3.0%) | 6 (3.0%) | 10 (5.0%) | 19 (9.5%) | 160 (79.6%) |
| Collaboration Suite Use | 4 (2.0%) | 7 (3.5%) | 9 (4.5%) | 7 (3.5%) | 174 (86.6%) |

A second frequency analyses were run on survey questions 26, 28, 30, 32, 34, 36,

38 and 40 to find out if students are using the Web 2.0 applications for personal

integrative purposes as well. Table 5 summarizes the findings.

Table 5

*Use of Web 2.0 Applications for Personal Integrative Purposes*

|  | Always | Often | Sometimes | Rarely | Never |
|---|---|---|---|---|---|
|  | n (%) | n (%) | n (%) | n (%) | n (%) |
| Photo Upload | 5 (2.5%) | 15 (7.5%) | 26 (12.9%) | 34 (16.9%) | 121 (60.2%) |
| Podcast Creation | 4 (2.0%) | 1 (0.5%) | 5 (2.5%) | 8 (4%) | 182 (90.5%) |
| Upload Videos | 7 (3.5%) | 5 (2.5%) | 18 ((9.0%) | 14 (7.0%) | 155 (77.1%) |
| Blog | 4 (2.0%) | 10 (5.0%) | 17 (8.5%) | 17 (8.5%) | 152 (75.6%) |
| Web page Update | 9 (4.5%) | 4 (2.0%) | 9 (4.5%) | 24 (11.9%) | 155 (77.1%) |
| Wiki Use | 1 (0.5%) | 1 (0.5%) | 10 (5.0%) | 9 (4.5%) | 180 (89.6%) |
| Social Bookmark Use | 5 (2.5%) | 3 (1.5%) | 11(5.5%) | 16 (8.0%) | 166 (82.6%) |
| Collaboration Suite Use | 2 (1.0%) | 6 (3.0%) | 8 (4%) | 8 (4%) | 176 (87.6%) |

Because all of the Web 2.0 applications in question are communication applications of some sort and many of them are employed on a regular basis in the mass communication industry it would be reasonable to assume that students majoring in mass communication and journalism would have a heightened interest in utilizing them and would use them more frequently. A second purpose of the current research project which is reflected in research question 3 below is to find out if mass communication and journalism utilize the Web 2.0 applications more frequently than non mass communication and journalism students.

> **RQ[3] Do students majoring in mass communication and journalism use Web 2.0 applications more frequently than students not majoring in mass communication and journalism?**

To answer research question 3 an independent sample t test was run on survey questions 10, 12, 14, 16, 18, 20, 22 and 24. Participants who answer "yes" to survey question 4 "Are you currently majoring in mass communication and journalism?" were

considered mass communication majors.  Students who answered "no" to the same

question were considered non mass communication and journalism majors. The eight

subjects who indicated that they were unsure about majoring in mass communication and

journalism were factored out of the tests. Student's academic major is considered

independent variable and the use of Web 2.0 applications is the dependent variable

Because the study analyzes eight different applications, a Bonferroni correction was

made setting alpha at .006 to lower the likelihood of a Type 1 error. Table 6 reflects the

results of the independent sample t test which examines the difference between mass

communication and journalism majors and non-mass communication and journalism

majors' frequency of use of the applications.

Table 6

*Comparison of Mass Communication and Non-Mass Communication Majors' Use of*

*Web 2.0 Applications*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Mass Com. Major | 2.53 | 1.67 | | | |
| Not Mass Com. Major. | 2.34 | 1.61 | 191 | .785 | .433 |
| **Create Podcasts** | | | | | |
| Mass Com. Major | .160 | .545 | | | |
| Not Mass Com. Major | .120 | .486 | 191 | .560 | .576 |
| **Upload Video** | | | | | |
| Mass Com. Major | 1.00 | 1.20 | | | |
| Not Mass Com. Major | .780 | 1.21 | 191 | 1.24 | .217 |
| **Create Blog** | | | | | |
| Mass Com. Major | 1.51 | 1.68 | | | |
| Not Mass Com. Major | .960 | 1.46 | 190 | .245 | .015 |
| **Create Web page** | | | | | |
| Mass Com. Major | 1.60 | 1.93 | | | |
| Not Mass Com. Major | 1.28 | 1.72 | 191 | 1.21 | .227 |
| **Wiki Use** | | | | | |
| Mass Com. Major | .410 | 1.15 | | | |
| Not Mass Com. Major | .320 | 1.00 | 191 | .562 | .575 |
| **Social Bookmark Use** | | | | | |
| Mass Com. Major | .740 | 1.61 | | | |
| Not Mass Com. Major | .850 | 1.63 | 191 | -.470 | .639 |
| **Collaborate Suite Use** | | | | | |
| Mass Com. Major | .630 | 1.52 | | | |
| Not Mass Com. Major | .480 | 1.32 | 191 | .711 | .478 |

The data summarized in Table 6 above show no significant findings. The results

suggests that mass communication and journalism students are not different that students

majoring in other disciplines in the overall frequency of use of the Web 2.0 applications.

Because many of the applications are utilized in the media industry, it is

reasonable to assume that students majoring in mass communication and journalism will

employ the Web 2.0 applications more frequently than non mass communication and journalism students for both academic and personal integrative purposes. As the research question 4 below reflects, the current study aspires to find out if mass communication and journalism students actually are employing the Web 2.0 applications more frequently than non mass communication and journalism majors for academic and personal integrative purposes.

**RQ[4] Do students majoring in mass communication and journalism use Web 2.0 applications for cognitive and personal integrative purposes more that students not majoring in mass communication and journalism?**

To answer research question 4, two independent sample t tests were run. The first independent t test was run on survey questions 25, 27, 29, 31, 33, 35, 37, and 39 and compares the means of mass communication and journalism majors to non-mass communication and journalism majors' use of Web 2.0 applications for academic purposes. The second independent t test was run on questions 26, 28, 30, 32, 34, 36, 38 and 40 and compares the means of mass communication and journalism majors to non-mass communication and journalism majors' use of Web 2.0 applications for personal integrative purposes. Participants who answer "yes" to survey question 4 "Are you currently majoring in mass communication and journalism?" were considered mass communication majors. Students who answered "no" to the same question were considered non mass communication and journalism majors. The eight subjects who indicated that they were unsure about majoring in mass communication and journalism were factored out of the tests. Student's academic major is considered independent variable and the use of Web 2.0 applications is the dependent variable. Because the study

analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error.

Table 7 below reflects the results of the independent sample t test which examines the difference between mass communication and journalism majors and non -mass communication and journalism majors' use of the applications for academic purposes.

Table 7

*Comparison of Mass Communication and Non-Mass Communication Majors' Use of Web 2.0 Applications for Academic Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Mass Com. Major | 1.88 | 1.08 | | | |
| Not Mass Com. Major. | 1.75 | 1.04 | 191 | .835 | .405 |
| **Create Podcasts** | | | | | |
| Mass Com. Major | 1.24 | .683 | | | |
| Not Mass Com. Major | 1.15 | .510 | 182 | 1.04 | .302 |
| **Upload Video** | | | | | |
| Mass Com. Major | 1.33 | .808 | | | |
| Not Mass Com. Major | 1.46 | 1.04 | 174 | -.957 | .340 |
| **Create Blog** | | | | | |
| Mass Com. Major | 1.56 | 1.00 | | | |
| Not Mass Com. Major | 1.33 | .785 | 184 | 1.72 | .088 |
| **Create Web page** | | | | | |
| Mass Com. Major | 1.30 | .718 | | | |
| Not Mass Com. Major | 1.47 | .939 | 172 | -1.43 | .154 |
| **Wiki Use** | | | | | |
| Mass Com. Major | 1.26 | .733 | | | |
| Not Mass Com. Major | 1.30 | .882 | 191 | -.353 | .725 |
| **Social Bookmark Use** | | | | | |
| Mass Com. Major | 1.34 | .901 | | | |
| Not Mass Com. Major | 1.49 | 1.01 | 191 | -1.13 | .262 |
| **Collaborate Suite Use** | | | | | |
| Mass Com. Major | 1.30 | .882 | | | |
| Not Mass Com. Major | 1.29 | .854 | 191 | .077 | .938 |

Since there are no significant findings, the data suggests that mass communication and journalism students are not different than students majoring in other disciplines in the frequency of utilizing the Web 2.0 applications for academic purposes.

Table 8 below reflects the results of the independent sample t test which examines the difference between mass communication and journalism majors and students majoring in other disciplines use of the applications for personal integrative purposes.

Table 8

*Comparison of Mass Communication and Non-Mass Communication Majors' Use of Web 2.0 Applications for Personal Integrative Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Mass Com. Major | 1.84 | 1.12 | | | |
| Not Mass Com. Major | 1.66 | 1.08 | 191 | 1.16 | .246 |
| | | | | | |
| **Create Podcasts** | | | | | |
| Mass Com. Major | 1.19 | .695 | | | |
| Not Mass Com. Major | 1.18 | .706 | 190 | .090 | .928 |
| | | | | | |
| **Upload Video** | | | | | |
| Mass Com. Major | 1.29 | .759 | | | |
| Not Mass Com. Major | 1.67 | 1.20 | 151 | -2.59 | .010 |
| | | | | | |
| **Create Blog** | | | | | |
| Mass Com. Major | 1.63 | 1.12 | | | |
| Not Mass Com. Major | 1.34 | .814 | 179 | 2.00 | .047 |
| | | | | | |
| **Create Web page** | | | | | |
| Mass Com. Major | 1.38 | .940 | | | |
| Not Mass Com. Major | 1.51 | 1.05 | 191 | -.875 | .382 |
| | | | | | |
| **Wiki Use** | | | | | |
| Mass Com. Major | 1.18 | .539 | | | |
| Not Mass Com. Major | 1.17 | .636 | 191 | .094 | .925 |
| | | | | | |
| **Social Bookmark Use** | | | | | |
| Mass Com. Major | 1.21 | .756 | | | |
| Not Mass Com. Major | 1.46 | .939 | 177 | -2.05 | .042 |
| | | | | | |
| **Collaborate Suite Use** | | | | | |
| Mass Com. Major | 1.28 | .842 | | | |
| Not Mass Com. Major | 1.20 | .618 | 191 | .708 | .480 |

Again, since there are no significant findings, the data analyses suggests that mass communication and journalism students are not different than students majoring in other disciplines in the frequency of utilizing the Web 2.0 applications for personal integrative purposes.

The digital divide has been a controversial issue since the advent of the Internet. The trepidation is that individuals who do not have convenient access to the Internet are at a disadvantage because they do not have access to certain information and services that enhance upward social mobility. One purpose of this study was to find out if the digital divide made a difference in the use of Web 2.0 applications. Historically some of the demographics associated with the digital divide include gender, ethnicity, age, experience and access to broadband.

In an effort to find out if the digital divide still does exist, different research questions must be posed and separate analyses must be run for each construct of the digital divide. Research question 5 listed below is the first research question pertaining to the digital divide and aspires to find out if gender makes a difference in the frequency of use of the Web 2.0 applications.

**RQ$^5$ Does gender make a difference in the overall frequency of the use of Web 2.0 applications?**

To answer research question five an independent sample t test was run on survey questions 10, 12, 14, 16, 18, 20, 22 and 24 to compare the means of the two groups of male or female. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error. All participants who checked the "Male" category on survey question three were considered

male and conversely those that check the "Female" category on the survey was consider

"Female" The results of the data analyses are reflected in Table 9 below.

Table  9

*Comparison of the Means of Male and Female Frequency of Use of Web 2.0 Applications*

|  | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| Variable |  |  |  |  |  |
| **Upload Photos** |  |  |  |  |  |
| Male | 2.28 | 1.65 |  |  |  |
| Female | 2.61 | 1.62 | 199 | -1.42 | .157 |
| **Create Podcasts** |  |  |  |  |  |
| Male | .20 | .620 |  |  |  |
| Female | .08 | .405 | 130 | 1.55 | .124 |
| **Upload Video** |  |  |  |  |  |
| Male | 1.07 | 1.26 |  |  |  |
| Female | .760 | 1.15 | 199 | 1.81 | .072 |
| **Create Blog** |  |  |  |  |  |
| Male | 1.10 | 1.55 |  |  |  |
| Female | 1.32 | 1.61 | 199 | -.995 | .321 |
| **Create Web page** |  |  |  |  |  |
| Male | 1.54 | 1.87 |  |  |  |
| Female | 1.37 | 1.84 | 199 | .638 | .524 |
| **Wiki Use** |  |  |  |  |  |
| Male | .460 | 1.22 |  |  |  |
| Female | .310 | .958 | 199 | .937 | .350 |
| **Social Bookmark Use** |  |  |  |  |  |
| Male | .870 | 1.72 |  |  |  |
| Female | .710 | 1.51 | 199 | .680 | .497 |
| **Collaborate Suite Use** |  |  |  |  |  |
| Male | .550 | 1.35 |  |  |  |
| Female | .560 | 1.47 | 199 | -.025 | .980 |

The results of the data analyses reflected in Table 9 show no significant difference

in male and female's overall frequency of use of the Web 2.0 applications.

Research question 6 listed below concerns gender difference in the frequency of use of Web 2.0 applications for academic and personal integrative purposes.

**RQ$^6$ Does gender make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

To answer the question, two separate independent sample t tests (one for academic use and one for personal integrative use) were run to compare the means of the two groups. For both analyses, gender is the independent variable and the use of Web 2.0 applications is the dependent variable. Specifically, to find out if gender makes a difference in the use of Web 2.0 applications for academic purposes, an independent t test was run on survey questions 25, 27, 29, 31, 33, 35, 37, and 39. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error for both tests. The results of the test analyzing gender differences in the use of Web 2.0 applications for academic purposes are reflected in Table 10.

Table 10

*Comparison of the Means of Male and Female Use of Web 2.0 Applications for*

*Academic Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Male | 1.80 | .972 | | | |
| Female | 1.84 | 1.12 | 199 | -.287 | .774 |
| | | | | | |
| **Create Podcasts** | | | | | |
| Male | 1.22 | .585 | | | |
| Female | 1.19 | .631 | 199 | .250 | .803 |
| | | | | | |
| **Upload Video** | | | | | |
| Male | 1.55 | 1.06 | | | |
| Female | 1.27 | .784 | 143 | 2.04 | .043 |
| | | | | | |
| **Create Blog** | | | | | |
| Male | 1.49 | .942 | | | |
| Female | 1.41 | .873 | 198 | .647 | .518 |
| | | | | | |
| **Create Web page** | | | | | |
| Male | 1.46 | .860 | | | |
| Female | 1.35 | .841 | 199 | .908 | .365 |
| | | | | | |
| **Wiki Use** | | | | | |
| Male | 1.36 | .905 | | | |
| Female | 1.24 | .736 | 199 | 1.07 | .286 |
| | | | | | |
| **Social Bookmark Use** | | | | | |
| Male | 1.39 | .867 | | | |
| Female | 1.42 | .990 | 199 | -.220 | .826 |
| | | | | | |
| **Collaborate Suite Use** | | | | | |
| Male | 1.39 | .935 | | | |
| Female | 1.25 | .818 | 199 | 1.06 | .292 |

The data analyses reflected in Table 10 above show no significant difference among the genders' frequency of use of the Web 2.0 applications for academic purposes.

To find out gender makes a difference in the use of the Web 2.0 applications for personal integrative purposes, a second independent t test was run on questions 26, 28, 30, 32, 34, 36, 38 and 40 and compares the means of the two groups, male and female.

Because the study analyzes eight different applications, a Bonferroni correction was

made setting alpha at .006 to lower the likelihood of a Type 1 error for both tests. Table

11 below reflects the results of comparing the means of the two groups, male and female,

use of Web 2.0 applications for personal integrative purposes.

Table 11

*Comparison of the Means of Male and Female Use of Web 2.0 Applications for Personal*

*Integrative Purposes*

| Variable | Mean | SD | df | t | p |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Male | 1.86 | 1.20 | | | |
| Female | 1.68 | 1.01 | 199 | 1.13 | .259 |
| **Create Podcasts** | | | | | |
| Male | 1.22 | .663 | | | |
| Female | 1.16 | .707 | 198 | .551 | .582 |
| **Upload Video** | | | | | |
| Male | 1.67 | 1.20 | | | |
| Female | 1.32 | .818 | 133 | 2.27 | .025 |
| **Create Blog** | | | | | |
| Male | 1.63 | 1.11 | | | |
| Female | 1.38 | .869 | 149 | 1.65 | .100 |
| **Create Web page** | | | | | |
| Male | 1.58 | 1.12 | | | |
| Female | 1.36 | .901 | 152 | 1.50 | .135 |
| **Wiki Use** | | | | | |
| Male | 1.24 | .691 | | | |
| Female | 1.14 | .488 | 138 | 1.19 | .234 |
| **Social Bookmark Use** | | | | | |
| Male | 1.37 | .879 | | | |
| Female | 1.31 | .832 | 199 | .561 | .576 |
| **Collaborate Suite Use** | | | | | |
| Male | 1.25 | .746 | | | |
| Female | 1.25 | .762 | 199 | .067 | .947 |

The results from the data analyses depicted in Table 11 above show no significant findings indicating that there is no significant difference in gender concerning  the frequency of use of the Web 2.0 applications for personal integrative purposes.

One important aspects of the digital divide is ethnicity. According to the research, African-Americans would have less experience using the Internet as a consequence of lower financial resources (DeBell & Chapmann, 2006; Demoussis & Giannakopoulos, 2006; Howard et al., 2001; Lenhart et al., 2005;  Madigan & Goodfellow, 2005; D. Oblinger & J. Oblinger, 2005; Roberts et al., 2005).  Since the majority of the sample population was limited to Caucasians and African-Americans, only those two races are reflected in the research question and data analyses. Since ethnicity is an important construct of the digital divide, research question 7 below intends to find out if ethnicity does make a difference in the frequency of use of Web 2.0 applications.

**RQ[7] Does ethnicity make a difference in the overall frequency of the use of Web 2.0 applications?**

To ascertain if ethnicity makes a difference in the frequency of use of Web 2.0 applications, an independent sample t test was run on survey questions 25, 27, 29, 31, 33, 35, 37, and 39.  For the data analyses, a subject was considered Caucasian if they checked the "Caucasian" category on survey question 2. A student was consider African-American if the participant checked the "African-American" category on survey question 2 and considered other race if the participant selected the "other"  category. The sample population consisted of 122 Caucasians and 68 African-Americans.  The 11 subjects who reported "other" as race were removed from the population for the purpose of the analyses. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error. Table 12 reflects

the results of comparing the means of the two groups, Caucasian and African-American, frequency of use of Web 2.0 applications.

Table 12

*Comparison of the Means of Caucasian and African-American Frequency of Use of Web 2.0 Applications*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Caucasian | 2.62 | 1.69 | | | |
| African-American | 2.18 | 1.50 | 153 | 1.88 | .062 |
| | | | | | |
| **Create Podcasts** | | | | | |
| Caucasian | .19 | .608 | | | |
| African-American | .04 | .270 | 181 | 2.26 | .025 |
| | | | | | |
| **Upload Video** | | | | | |
| Caucasian | 1.07 | 1.31 | | | |
| African-American | .54 | .905 | 179 | 3.23 | .001* |
| | | | | | |
| **Create Blog** | | | | | |
| Caucasian | 1.41 | 1.62 | | | |
| African-American | .79 | 1.38 | 158 | 2.77 | .006* |
| | | | | | |
| **Create Web page** | | | | | |
| Caucasian | 1.48 | 1.88 | | | |
| African-American | 1.29 | 1.75 | 188 | .653 | .514 |
| | | | | | |
| **Wiki Use** | | | | | |
| Caucasian | .39 | 1.08 | | | |
| African-American | .31 | 1.05 | 188 | .522 | .602 |
| | | | | | |
| **Social Bookmark Use** | | | | | |
| Caucasian | .66 | 1.51 | | | |
| African-American | .96 | 1.67 | 188 | -1.26 | .209 |
| | | | | | |
| **Collaborate Suite Use** | | | | | |
| Caucasian | .53 | 1.37 | | | |
| African-American | .62 | 1.57 | 188 | -.388 | .698 |

The results from the data analyses do reflect significant findings in the frequency of uploading videos and blogging.  The data suggests that Caucasians utilize video uploading sites to upload videos and blog significantly more frequently than African-Americans.  For all the other applications, the data suggests that there are no significant

differences in Caucasians and African-Americans' frequency of use of the Web 2.0 applications.

To further understand if ethnicity does make a difference in the use of Web 2.0 applications, research question 8 listed below was posed to determine if ethnicity does make a difference in the use of Web 2.0 applications for academic and personal integrative purposes. This is important because those purposes have the greatest potential of enhancing one's social upward mobility.

**RQ[8] Does ethnicity make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

To determine if ethnicity makes a difference in the use of Web 2.0 applications for academic and also personal integrative purposes, two independent sample t tests were run, one for academic and one for personal integrative purposes. For the data analyses on both tests, a subject was considered Caucasian if they checked the "Caucasian" category on survey question 2. A student was consider African-American if the participant checked the "African-American" category on survey question 2 and considered other race if the participant selected the "other" category. The sample population consisted of 122 Caucasians and 68 African-Americans. The 11 subjects who reported "other" as race were factored out of the population for the purpose of the analyses. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error. To determine the difference in ethnicity use of Web 2.0 applications for academic purposes, an independent sample t test was run on survey questions 25, 27, 29, 31, 33, 35, 37, and 39. The results from the data analyses

comparing the means of the two groups' use of Web 2.0 tools for academic purposes are

reflected in Table 13 below.

Table 13

*Comparison of the Means of Caucasian and African-American Use of Web 2.0*

*Applications for Academic Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Caucasian | 1.80 | 1.09 | | | |
| African-American | 1.78 | .990 | 188 | .150 | .881 |
| **Create Podcasts** | | | | | |
| Caucasian | 1.20 | .588 | | | |
| African-American | 1.07 | .263 | 181 | 2.12 | .036 |
| **Upload Video** | | | | | |
| Caucasian | 1.38 | .897 | | | |
| African-American | 1.31 | .738 | 187 | .558 | .577 |
| **Create Blog** | | | | | |
| Caucasian | 1.49 | .905 | | | |
| African-American | 1.28 | .750 | 161 | 1.70 | .091 |
| **Create Web page** | | | | | |
| Caucasian | 1.36 | .761 | | | |
| African-American | 1.35 | .824 | 188 | .065 | .948 |
| **Wiki Use** | | | | | |
| Caucasian | 1.20 | .598 | | | |
| African-American | 1.40 | .979 | 95 | -1.53 | .128 |
| **Social Bookmark Use** | | | | | |
| Caucasian | 1.34 | .809 | | | |
| African-American | 1.44 | 1.01 | 188 | -.783 | .435 |
| **Collaborate Suite Use** | | | | | |
| Caucasian | 1.20 | .700 | | | |
| African-American | 1.35 | .877 | 115 | -1.26 | .210 |

The results of the data analyses reflected in Table 13 suggest that there are no

significant differences in Caucasians and African-Americans in the frequency of use of

the Web 2.0 applications for academic purposes.

To ascertain if ethnicity makes a difference in the use of Web 2.0 applications for personal integrative purposes, a second independent t test was run on questions 26, 28, 30, 32, 34, 36, 38 and 40 and compares the means of the two groups Caucasians and African-Americans. Table 14 reflects the results of comparing the means of the two groups, Caucasian and African-American, use of Web 2.0 applications for personal integrative purposes.

Table 14

*Comparison of the Means of Caucasian and African-American Use of Web 2.0*

*Applications for Personal Integrative Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Caucasian | 1.88 | 1.15 | | | |
| African-American | 1.53 | .954 | 188 | 2.11 | .036 |
| **Create Podcasts** | | | | | |
| Caucasian | 1.16 | .592 | | | |
| African-American | 1.07 | .315 | 186 | 1.27 | .207 |
| **Upload Video** | | | | | |
| Caucasian | 1.46 | 1.01 | | | |
| African-American | 1.39 | .816 | 186 | .520 | .604 |
| **Create Blog** | | | | | |
| Caucasian | 1.53 | .984 | | | |
| African-American | 1.29 | .811 | 162 | 1.77 | .079 |
| **Create Web page** | | | | | |
| Caucasian | 1.46 | 1.01 | | | |
| African-American | 1.34 | .840 | 188 | .836 | .404 |
| **Wiki Use** | | | | | |
| Caucasian | 1.16 | .498 | | | |
| African-American | 1.15 | .466 | 188 | .118 | .906 |
| **Social Bookmark Use** | | | | | |
| Caucasian | 1.20 | .602 | | | |
| African-American | 1.50 | 1.06 | 92 | -2.12 | .037 |
| **Collaborate Suite Use** | | | | | |
| Caucasian | 1.15 | .626 | | | |
| African-American | 1.32 | .818 | 111 | -1.54 | .126 |

The results of the data analyses reflected in Table 14 suggest that there are no

significant differences in Caucasians and African-Americans in the frequency of use of

the Web 2.0 applications for personal integrative purposes

A premise of the digital divide is that younger students grew up with Internet

technology in their home and will be more comfortable using it than older students who

did not grow up with the Internet. As a consequence, the younger students will be more

comfortable utilizing the applications and, therefore, use them more often. For the

purpose of this study, age is divided into two categories: 18-20 years of age, also known

as traditional students, and age 21-65 years of age, also known as nontraditional students.

The division was determined based on the student population and the fact that it would be

difficult to find enough students in their late 20s or early 30s to participate. Because age

was considered an important construct of the digital divide, research question number 9 is

posed to find out if age does make a difference in the frequency of use of the Web 2.0

applications.

**RQ[9] Does age make a difference in the overall frequency of the use of Web 2.0 applications?**

To find out if age made a difference in the frequency of use of Web 2.0

applications, an independent sample t test was run on survey questions 10, 12, 14, 16, 18,

20, 22 and 24 to compare the means of the two groups age 18 -20 and 21-65. A

participant was considered a traditional student if they checked the 18-20 age category

and nontraditional if they checked the 21 and older category on survey question 1.  The

population of the sample consisted of 119 traditional students and 82 nontraditional

students. Because the study analyzes eight different applications, a Bonferroni correction

was made setting alpha at .006 to lower the likelihood of a Type 1 error. Table 15 reflects

the results of comparing the means of the two groups', traditional students age 18-20 and

nontraditional student's age 21-65, frequency of use of Web 2.0 applications.

Table 15

*Comparison of the Means of Traditional and Nontraditional Student Frequency of Use*

*of Web 2.0 Applications*

| Variable | Mean | SD | df | t | p |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| 18-20 | 2.55 | 1.63 | | | |
| 21-65 | 2.35 | 1.65 | 199 | .853 | .395 |
| **Create Podcasts** | | | | | |
| 18-20 | .13 | .479 | | | |
| 21-65 | .15 | .547 | 199 | -.278 | .781 |
| **Upload Video** | | | | | |
| 18-20 | .92 | 1.28 | | | |
| 21-65 | .84 | 1.08 | 199 | .479 | .632 |
| **Create Blog** | | | | | |
| 18-20 | 1.33 | 1.62 | | | |
| 21-65 | 1.09 | 1.53 | 199 | 1.07 | .287 |
| **Create Web page** | | | | | |
| 18-20 | 1.66 | 1.96 | | | |
| 21-65 | 1.13 | 1.63 | 192 | 2.05 | .042 |
| **Wiki Use** | | | | | |
| 18-20 | .44 | 1.17 | | | |
| 21-65 | .28 | .920 | 195 | 1.06 | .291 |
| **Social Bookmark Use** | | | | | |
| 18-20 | .73 | 1.53 | | | |
| 21-65 | .84 | 1.69 | 199 | -.481 | .631 |
| **Collaborate Suite Use** | | | | | |
| 18-20 | .45 | 1.31 | | | |
| 21-65 | .72 | 1.57 | 153 | -1.30 | .194 |

The results of the data analyses depicted in Table 15 above suggests that

traditional and nontraditional students are not significantly different in their frequency of

use of the Web 2.0 applications.

Does age make a difference in the use of Web 2.0 applications for academic and

personal integrative purposes?  Research question 10 is posed to find that out.

**RQ[10] Does age make a difference in the use of the Web 2.0 applications for academic and personal integrative purposes?**

To find out if in fact age does make a significant utilizing the Web 2.0 applications for academic and personal integrative purposes, two independent sample t tests to compare the means of the two groups were run. For both analyses, a participant was considered a traditional student if they checked the 18-20 age category and nontraditional if they checked the 21 and older category on survey question one. The population of the sample consisted of 119 traditional students and 82 nontraditional students. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error. The first independent sample t test was run on survey questions 25, 27, 29, 31, 33, 35, 37, and 39 to find out if age did make a difference in the use of Web 2.0 applications for academic purposes. Table 16 reflects the results of comparing the means of traditional students and nontraditional students' use of Web 2.0 applications for academic purposes.

Table 16

*Comparison of the Means of Traditional and Nontraditional Student*

*Use of Web 2.0 Applications for Academic Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| 18-20 | 1.78 | 1.03 | | | |
| 21-65 | 1.88 | 1.10 | 199 | -.632 | .528 |
| **Create Podcasts** | | | | | |
| 18-20 | 1.20 | .645 | | | |
| 21-65 | 1.21 | .561 | 199 | -.064 | .949 |
| **Upload Video** | | | | | |
| 18-20 | 1.30 | .809 | | | |
| 21-65 | 1.52 | 1.04 | 145 | -1.66 | .099 |
| **Create Blog** | | | | | |
| 18-20 | 1.42 | .840 | | | |
| 21-65 | 1.49 | .984 | 198 | -.559 | .577 |
| **Create Web page** | | | | | |
| 18-20 | 1.39 | .865 | | | |
| 21-65 | 1.40 | .829 | 199 | -.130 | .897 |
| **Wiki Use** | | | | | |
| 18-20 | 1.28 | .823 | | | |
| 21-65 | 1.30 | .796 | 199 | -.237 | .813 |
| **Social Bookmark Use** | | | | | |
| 18-20 | 1.37 | .929 | | | |
| 21-65 | 1.45 | .958 | 199 | -.604 | .547 |
| **Collaborate Suite Use** | | | | | |
| 18-20 | 1.26 | .818 | | | |
| 21-65 | 1.38 | .938 | 199 | -.943 | .347 |

The fact that there are no significant findings in the data analyses reflected in

Table 16, suggests that there is not much difference in the frequency of use of the Web

2.0 applications by traditional and nontraditional students for academic pruposes.

The second independent t test was run on survey questions 26, 28, 30, 32, 34, 36, 38 and 40 and compares the means of the two age groups. Table 17 reflects the results of comparing the means of the two groups, traditional students age 18-20 and nontraditional student's age 21-65, frequency of use of Web 2.0 applications for personal integrative purposes.

Table 17

*Comparison of the Means of Traditional And Nontraditional Student Use Of Web 2.0 Applications For Personal Integrative Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| 18-20 | 1.68 | .999 | | | |
| 21-65 | 1.85 | 1.22 | 199 | -1.10 | .272 |
| | | | | | |
| **Create Podcasts** | | | | | |
| 18-20 | 1.18 | .700 | | | |
| 21-65 | 1.20 | .675 | 198 | -.173 | .863 |
| | | | | | |
| **Upload Video** | | | | | |
| 18-20 | 1.46 | 1.03 | | | |
| 21-65 | 1.48 | .972 | 197 | -.097 | .923 |
| | | | | | |
| **Create Blog** | | | | | |
| 18-20 | 1.47 | .976 | | | |
| 21-65 | 1.50 | .997 | 198 | -.180 | .858 |
| | | | | | |
| **Create Web page** | | | | | |
| 18-20 | 1.44 | 1.00 | | | |
| 21-65 | 1.46 | .996 | 199 | -.184 | .854 |
| | | | | | |
| **Wiki Use** | | | | | |
| 18-20 | 1.15 | .515 | | | |
| 21-65 | 1.22 | .667 | 199 | -.818 | .415 |
| | | | | | |
| **Social Bookmark Use** | | | | | |
| 18-20 | 1.29 | .806 | | | |
| 21-65 | 1.39 | .913 | 199 | -.787 | .432 |
| | | | | | |
| **Collaborate Suite Use** | | | | | |
| 18-20 | 1.23 | .741 | | | |
| 21-65 | 1.28 | .774 | 199 | -.495 | .621 |

The results of the data analyses reflected in Table 17 also suggest that there is no significant difference in the use of Web 2.0 applications by traditional and nontraditional students for personal integrative purposes.

Another construct associated with the digital divide is previous experience utilizing the Internet technology. To find out if previous experience using the Internet technology made a difference in the frequency of use of the Web 2.0 applications research question 11 was posed.

> **RQ[11] Do students who had access to the Internet in their home greater than five years prior to entering college utilize Web 2.0 applications more frequently than students who had Internet connection in their home for five years or less?**

For the purpose of the present study, the length of time one had home access to a computer with Internet access was used to measure one's experience using the Internet technology. However, just because a person had convenient home access to a computer with Internet access does not mean that the computer was utilized by that particular person. To find out if home computer access with Internet connection made a difference in the use of Web 2.0 applications, the students were asked how long they had computer and Internet access in their homes. A frequency analyses of the data revealed that 13 of the subjects had no access to a computer with Internet connection at home, another 13 had home access for less than one year, and another 28 had home access to the technology for a various number of years in the range of five or less. Fifteen subjects did not specify the number of years they had access to the technology at home, while 132 subjects indicated they had access to the technology for greater than five years.

The subjects were divided into two groups, those who had home access to a computer with Internet access for five years or less and those who had access to the same technology for greater than five years. The greater than five years and five years or less experience grouping was used for this study because findings of the Pew Internet and American Life project suggest that persons with five years or less using the Internet use fewer technology applications overall (Horrigan, 2007). Subjects who did not have home access to the technology and those who did not specify the number of years they had home access were factored out of the data analyses. The final sample included 41 subjects with five years or less and 132 subjects with greater than five years of home access to the technology. To even out the sample sizes, 44 subjects were randomly selected from the group with home access to the technology greater than five years by selecting every third subject. Frequency analyses were run on the demographics of the 44 subjects selected for comparison. After the analyses was run, three more subjects were randomly eliminated to assemble a sample that was more equitable in demographics. The final groups were comprised of 40 subjects with home access to the technology for five years or less and 41 subjects with home access to the technology for greater than five years.

To find out if there was a difference in the frequency of use of Web 2.0 applications between the two groups, an independent sample t test was run on survey questions 10, 12, 14, 16, 18, 20, 22 and 24 to compare the means of the two groups. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error. Table 18 reflects the results of comparing the means of the two groups, students with home access to a

computer with Internet connection for greater than five years and students who had home access to a computer with Internet connection for five years or less in reference to the frequency of use of the Web 2.0 applications.

Table 18

*Comparison of the Means of Students with More than Five Years and Students with Five Years or Less Home Access in Frequency of Use of Web 2.0 Applications*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Five Years or Less | 2.62 | 1.60 | | | |
| Greater Than Five Years | 2.56 | 1.74 | 79 | .172 | .864 |
| **Create Podcasts** | | | | | |
| Five Years or Less | .02 | .158 | | | |
| Greater Than Five Years | .27 | .633 | 45 | -2.38 | .021 |
| **Upload Video** | | | | | |
| Five Years or Less | .85 | 1.37 | | | |
| Greater Than Five Years | 1.20 | 1.42 | 79 | -1.11 | .269 |
| **Create Blog** | | | | | |
| Five Years or Less | .98 | 1.39 | | | |
| Greater Than Five Years | 1.54 | 1.82 | 75 | -1.57 | .122 |
| **Create Web page** | | | | | |
| Five Years or Less | 1.30 | 1.83 | | | |
| Greater Than Five Years | 2.0 | 2.09 | 79 | -1.60 | .113 |
| **Wiki Use** | | | | | |
| Five Years or Less | .38 | 1.12 | | | |
| Greater Than Five Years | .54 | 1.34 | 79 | -.586 | .559 |
| **Social Bookmark Use** | | | | | |
| Five Years or Less | .48 | 1.32 | | | |
| Greater Than Five Years | .83 | 1.67 | 76 | -1.06 | .293 |
| **Collaborate Suite Use** | | | | | |
| Five Years or Less | .45 | 1.28 | | | |
| Greater Than Five Years | .34 | 1.04 | 79 | .419 | .676 |

The findings from the data analyses which is reflected in Table 18 above suggests that experience does not make a difference in the overall frequency of use of the Web 2.0 applications.

Do students who have more experience using the Internet technology, use the Web 2.0 tools more frequently for academic and personal integrative purposes more than students who have less experience using the technology? Research question 12 is posed to ask that question.

**RQ[12] Do students who have had access to the Internet in their home for greater than five years prior to entering college utilize Web 2.0 applications for cognitive and personal integrative purposes more than students who had Internet connection in their home for five years or less?**

To find out if students who had home access to a computer with Internet technology for greater than five years use the applications more frequently for academic and personal integrative purposes than students who had home access to the technology for less than five years, two independent sample t tests were used to compare the means of the same two groups. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error for both analyses. The first independent sample t test was run on survey questions 25, 27, 29, 31, 33, 35, 37, and 39 to find out if students with five or more years home access to Internet technology utilized it more for academic purposes than students with less years of home Internet access. Table 19 reflects the results on comparing the means of the two groups, students with home access to a computer with Internet connection for five years or less to students who had home access to a computer with Internet connection for greater than five years in their use of the Web 2.0 applications for academic purposes.

Table 19

*Comparison of the Means of Students with More than Five Years and Students with Five*

*Years or Less Home Access in Frequency of Use of Web 2.0 Applications for Academic*

 *Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Five Years or Less | 1.85 | 1.03 | | | |
| Greater Than Five Years | 2.07 | 1.15 | 79 | -.921 | .360 |
| **Create Podcasts** | | | | | |
| Five Years or Less | 1.08 | .350 | | | |
| Greater Than Five Years | 1.20 | .459 | 75 | -1.33 | .189 |
| **Upload Video** | | | | | |
| Five Years or Less | 1.38 | .897 | | | |
| Greater Than Five Years | 1.41 | 1.02 | 79 | -.185 | .854 |
| **Create Blog** | | | | | |
| Five Years or Less | 1.32 | .730 | | | |
| Greater Than Five Years | 1.63 | 1.13 | 68 | -1.46 | .148 |
| **Create Web page** | | | | | |
| Five Years or Less | 1.18 | .446 | | | |
| Greater Than Five Years | 1.37 | .915 | 58 | -1.20 | .236 |
| **Wiki Use** | | | | | |
| Five Years or Less | 1.32 | .829 | | | |
| Greater Than Five Years | 1.17 | .543 | 79 | .993 | .324 |
| **Social Bookmark Use** | | | | | |
| Five Years or Less | 1.28 | .751 | | | |
| Greater Than Five Years | 1.44 | 1.00 | 79 | -.833 | .408 |
| **Collaborate Suite Use** | | | | | |
| Five Years or Less | 1.35 | .893 | | | |
| Greater Than Five Years | 1.27 | .775 | 79 | .440 | .661 |

The data analyses results reflected Table 19 above suggest that previous

experience utilizing the Internet technology does not make a difference in the use of Web

2.0 applications for academic purposes.

A second data analyses were run only this time on questions 26, 28, 30, 32, 34, 36, 38 and 40 to compares the means of the two groups, students with greater than five years of home access to a computer with an Internet connection and students with five years or less home access to a computer with an Internet connection. The purpose of the analyses were to determine if the more experienced users were more likely to utilize the Web 2.0 applications for personal integrative purposes than the less experienced users. Table 20 reflects the results of comparing the means of the two groups, students with home access to a computer with Internet connection for five years or less to students who had home access to a computer with Internet connection for greater than five years in their use of the Web 2.0 applications for personal integrative purposes.

Table 20

*Comparison of the Means of Students with More than Five Years and Students with Five Years or Less Home Access in Frequency of Use of Web 2.0 Applications for Personal Integrative  Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Five Years or Less | 1.70 | 1.07 | | | |
| Greater Than Five Years | 1.93 | 1.21 | 79 | -.893 | .375 |
| | | | | | |
| **Create Podcasts** | | | | | |
| Five Years or Less | 1.02 | .158 | | | |
| Greater Than Five Years | 1.15 | .478 | 49 | -1.54 | .129 |
| | | | | | |
| **Upload Video** | | | | | |
| Five Years or Less | 1.48 | 1.06 | | | |
| Greater Than Five Years | 1.56 | 1.20 | 79 | -.340 | .735 |
| | | | | | |
| **Create Blog** | | | | | |
| Five Years or Less | 1.40 | .841 | | | |
| Greater Than Five Years | 1.63 | 1.13 | 79 | -1.05 | .296 |
| | | | | | |
| **Create Web page** | | | | | |
| Five Years or Less | 1.25 | .670 | | | |
| Greater Than Five Years | 1.59 | 1.26 | 61 | -1.50 | .140 |
| | | | | | |
| **Wiki Use** | | | | | |
| Five Years or Less | 1.10 | .379 | | | |
| Greater Than Five Years | 1.20 | .558 | 79 | -.896 | .373 |
| | | | | | |
| **Social Bookmark Use** | | | | | |
| Five Years or Less | 1.22 | .733 | | | |
| Greater Than Five Years | 1.41 | .865 | 79 | -1.06 | .291 |
| | | | | | |
| **Collaborate Suite Use** | | | | | |
| Five Years or Less | 1.38 | .925 | | | |
| Greater Than Five Years | 1.22 | .652 | 79 | .876 | .384 |

The data analyses results reflected in Table 20 suggests that there is no significant difference in experienced and inexperienced Internet users in the use of the Web 2.0 applications for personal integrative purposes.

Another factor considered part of the digital divide is access to broadband connection, which has nothing to do with age, ethnicity or gender. In the past, many areas of the United States did not have the infrastructure to provide access to broadband Internet connection in rural areas. This is important to this study because research suggests that those with broadband connection go online daily and engage in a wider variety of activities than those without broadband access (Horrigan & Smith, 2007; Horrigan, 2008; Lebo, 2001; Matthews & Schrum, 2003; Watson et al., 2004). Since access to a broadband connection is becoming more widely available in public places, it is difficult to predict whether students with home broadband access use the Web 2.0 applications more frequently than students who do not have home broadband access. Research question 13  below is posed to find out if home access to a broadband connection makes a difference in the frequency of use of Web 2.0 applications.

**RQ[13] Do students with broadband Internet connection at home utilize Web 2.0 applications more frequently than students with a dial-up connection?**

To determine the number of subjects with home broadband Internet connection and the number of subjects with dial-up, frequency analyses were run. The choices the subjects had to choose from were dial-up, DSL, cable, wireless, fiber-optic, other, don't know and no Internet connection. DSL, cable, wireless, and fiber-optic were considered a broadband connection and were grouped together and coded as high-speed for the data analyses. Of the total sample population of 201, only 11 members reported having a dial-up connection, while 167 reported having home broadband access. Only 14 reported having no home Internet access, 8 did not know what type of home Internet access they had, and 1 reported other, totaling 23 subjects. For the purpose of the analyses, the 23

subjects reporting no home Internet access, don't know or other were factored out. The

remaining population consisted of 11 dial-up users and 167 broadband users. Since there

was a large difference (156) between those with home broadband connection and those

with dial-up, to compare the means of the two groups, many of the subjects with home

broadband access were factored out. To come up with a representative group of

broadband users, the subjects were sorted by survey ID and every fifteenth subject was

selected to remain in the analyses. The final sample of broadband users was comprised of

one fiber-optic, one DSL, two cable and seven wireless connections totaling 11

broadband users. To create two groups, all of the members of the broadband users were

recoded as "high-speed," and the dial-up group remained labeled as "dial-up." The final

sample used in the analyses was comprised of 22 subjects, 11 dial-up users and 11

broadband users. The demographics of the 22 subjects include 11 (50%) traditional

students and 11 (50%) nontraditional students, 13 (59%) Caucasians, seven (32%)

African-Americans, two (9%) other, eight (36%) male, 14 (64%) female, 10 (45%) mass

communication and journalism majors, 11 (50%) non-mass communication and

journalism majors and one (5%) undecided.

To compare the means of two groups, an independent sample t test was run on

survey questions 10, 12, 14, 16, 18, 20, 22 and 24. Because the study analyzes eight

different applications, a Bonferroni correction was made setting alpha at .006 to lower the

likelihood of a Type 1 error. Table 21 reflects the results of comparing the means of

students who use home broadband Internet connection and students who use home dial-

up Internet connection and their frequency of use of Web 2.0 applications.

Table 21

*Comparison of the Means of Students with Broadband and Students With Dial-Up Home*

*Access Internet Connection and Their Frequency of Use of Web 2.0 Applications*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Dial-Up | 1.55 | 2.02 | | | |
| Broadband | 2.73 | 1.55 | 20 | -1.54 | .140 |
| **Create Podcasts** | | | | | |
| Dial-Up | .00 | .000 | | | |
| Broadband | .09 | .302 | 10 | -1.00 | .341 |
| **Upload Video** | | | | | |
| Dial-Up | .27 | .647 | | | |
| Broadband | 1.00 | 1.18 | 15 | -1.79 | .093 |
| **Create Blog** | | | | | |
| Dial-Up | 1.09 | 2.02 | | | |
| Broadband | 1.73 | 1.68 | 20 | -.803 | .431 |
| **Create Web page** | | | | | |
| Dial-Up | .55 | 1.21 | | | |
| Broadband | 2.00 | 2.10 | 16 | -1.99 | .064 |
| **Wiki Use** | | | | | |
| Dial-Up | .00 | .000 | | | |
| Broadband | .09 | .302 | 10 | -1.00 | .341 |
| **Social Bookmark Use** | | | | | |
| Dial-Up | .27 | .905 | | | |
| Broadband | .55 | 1.51 | 20 | -.514 | .613 |
| **Collaborate Suite Use** | | | | | |
| Dial-Up | .00 | .000 | | | |
| Broadband | .64 | 1.43 | 10 | -1.47 | .172 |

The data analyses results reflected in Table 21 suggests there is no significant

different in dial-up users and broadband users' frequency of use of the Web 2.0

applications. One should view the results with caution since the sample size was very

small.

The final research question aspires to find out if students with a home broadband connection were more likely to employ the Web 2.0 applications for both academic and personal integrative purposes more frequently that students with a home dial-up connection.

**RQ[14] Do students with broadband Internet connection at home utilize Web 2.0 applications for cognitive and personal integrative purposes more than students with a dial-up connection?**

To ascertain if students with home access to broadband Internet connection are more likely to utilize the Web 2.0 applications for academic purposes and personal integrative purposes more frequently than students with home access to dial-up Internet connection, two independent sample t tests were run, one for academic use and one for personal integrative use. Because the study analyzes eight different applications, a Bonferroni correction was made setting alpha at .006 to lower the likelihood of a Type 1 error. The same 22 subjects were used in these two analyses as was use in the previous analyses concerning broadband and dial-up connection and frequency of use.  The first independent sample t test was run on survey questions 10, 12, 14, 16, 18, 20, 22 and 24 to determine the difference in the means of broadband users and dial-up users in their frequency of use for academic purposes. Table 22 reflects the results of comparing the means of students who use home Broadband Internet connection and students who use home dial-up Internet connection and their use of Web 2.0 applications for academic purposes.

Table 22

*Comparison of the Means of Students with Broadband and Students with Dial-Up Home*

*Access Internet Connection and Their Frequency of Use of Web 2.0 Applications for*

*Academic Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Dial-Up | 1.18 | .405 | | | |
| Broadband | 2.09 | 1.22 | 12 | -2.34 | .037 |
| **Create Podcasts** | | | | | |
| Dial-Up | 1.09 | .302 | | | |
| Broadband | 1.09 | .302 | 20 | .000 | 1.00 |
| **Upload Video** | | | | | |
| Dial-Up | 1.00 | .000 | | | |
| Broadband | 1.27 | .647 | 10 | -1.40 | .192 |
| **Create Blog** | | | | | |
| Dial-Up | 1.45 | .934 | | | |
| Broadband | 1.73 | 1.01 | 20 | -.658 | .518 |
| **Create Web page** | | | | | |
| Dial-Up | 1.09 | .302 | | | |
| Broadband | 1.73 | 1.01 | 12 | -2.00 | .069 |
| **Wiki Use** | | | | | |
| Dial-Up | 1.00 | .000 | | | |
| Broadband | 1.36 | .924 | 10 | -1.30 | .221 |
| **Social Bookmark Use** | | | | | |
| Dial-Up | 1.00 | .000 | | | |
| Broadband | 1.45 | .934 | 10 | -1.61 | .138 |
| **Collaborate Suite Use** | | | | | |
| Dial-Up | 1.18 | .603 | | | |
| Broadband | 1.55 | 1.29 | 20 | -.845 | .408 |

The data analyses results reflected in Table 21 suggests there is no significant

difference in dial-up users and broadband users' frequency of use of the Web 2.0

applications for academic purposes.  One should view the results with caution since the

sample size was very small.

The second independent t test was run on survey questions 26, 28, 30, 32, 34, 36, 38 and 40 and compares the means of broadband users to dial-up users frequency of use of the Web 2.0 applications for personal integrative purposes. Table 23 reflects the results of comparing the means of students who use home broadband Internet connection and students who use home dial-up Internet connection and their use of Web 2.0 applications for personal integrative purposes.

Table 23

*Comparison of the Means of Students with Broadband and Students with Dial-Up Home*

*Access Internet Connection and Their Frequency of Use of Web 2.0 Applications for*

*Personal Integrative Purposes*

| Variable | Mean | SD | df | *t* | *p* |
|---|---|---|---|---|---|
| **Upload Photos** | | | | | |
| Dial-Up | 1.36 | .924 | | | |
| Broadband | 2.36 | 1.29 | 20 | -2.09 | .049 |
| **Create Podcasts** | | | | | |
| Dial-Up | 1.09 | .302 | | | |
| Broadband | 1.09 | .302 | 20 | .000 | 1.00 |
| **Upload Video** | | | | | |
| Dial-Up | 1.00 | .000 | | | |
| Broadband | 1.55 | .934 | 10 | -1.94 | .082 |
| **Create Blog** | | | | | |
| Dial-Up | 1.55 | 1.21 | | | |
| Broadband | 1.91 | 1.30 | 20 | -.678 | .506 |
| **Create Web page** | | | | | |
| Dial-Up | 1.36 | 1.21 | | | |
| Broadband | 1.82 | 1.25 | 20 | -.868 | .396 |
| **Wiki Use** | | | | | |
| Dial-Up | 1.00 | .000 | | | |
| Broadband | 1.18 | .603 | 10 | -1.00 | .341 |
| **Social Bookmark Use** | | | | | |
| Dial-Up | 1.09 | .302 | | | |
| Broadband | 1.64 | 1.29 | 11 | -1.37 | .198 |
| **Collaborate Suite Use** | | | | | |
| Dial-Up | 1.18 | .603 | | | |
| Broadband | 1.45 | .934 | 20 | -.813 | .426 |

The data analyses results reflected in Table 21 suggests there is no significant different in dial-up users and broadband users frequency of use of the Web 2.0 applications for personal integrative purposes. One should view the results with caution since the sample size was very small.

The sample size of 22 subjects was almost too small to run an analyses on since 30 subjects are required to assume a normal distribution. Because of this and to gain more insight, the researcher felt it prudent to find out how many broadband users and how many dial-up users used each of the applications. To find out the actual number of users for each application among the dial-up and broadband users, frequency analyses were run. Table 24 reflects the results of comparing the number of dial-up users and number of broadband users who employ the Web 2.0 applications.

Table 24

*Comparison of the Number of Dial-up Users and the Number of Broadband Users Who*

*Employ the Web 2.0 Applications*

| Web 2.0 Application | Dial-up Users | Broadband Users |
| --- | --- | --- |
| | n (%) | n (%) |
| **Upload Photos** | | |
| Yes | 4 (36%) | 11 (100%) |
| No | 7 (64%) | 0 (0%) |
| **Create Podcast** | | |
| Yes | 0 (0%) | 1 (9%) |
| No | 11 (100%) | 10 (91%) |
| **Upload Videos** | | |
| Yes | 2 (18%) | 5 (45%) |
| No | 9 (82%) | 6 (55%) |
| **Create Blog** | | |
| Yes | 4 (36%) | 7 (64%) |
| No | 7 (64%) | 4 (36%) |
| **Create Web pages** | | |
| Yes | 3 (27%) | 7 (64%) |
| No | 8 (73%) | 4 (36%) |
| **Using a Wiki** | | |
| Yes | 0 (0%) | 1 (9%) |
| No | 11 (100%) | 10 (91%) |
| **Social Bookmark Use** | | |
| Yes | 1 (9%) | 2 (18%) |
| No | 10 (91%) | 9 (82%) |
| **Collaborative Suite Use** | | |
| Yes | 0 (0%) | 2 (18%) |
| No | 11 (100%) | 9 (82%) |

CHAPTER V

DISCUSSION

The focus of this study is to investigate the use of Web 2.0 applications by college students and to find out if the applications are utilized by mass communication students more frequently than non mass communication students. The first objective is to find out if college students are utilizing the Web 2.0 applications and if so, are they employing them for academic and personal integrative purposes.

Since many of the applications are communication tools utilized in the media industry a second purpose of this study was to find out if students majoring in mass communications and journalism utilized them more frequently than non mass communication and journalism students over all and for academic and personal integrative purposes. This is important because utilizing some of the applications such as Web pages, blogs or wikis as a portal, a journalism student could provide writing samples, artistic photos and multimedia creations for potential employers, in effect creating a digital portfolio. At the same time, a student would be demonstrating their skills in utilizing technology often used in the media industry.

To utilize the Web 2.0 applications one must have access to a device with Internet connection. Convenient access to the Internet is not uniform across the population of the United States and in other countries. Therefore, the third objective of this study is to look at the factors of the digital divide in terms of age, gender, ethnicity, experience using Internet technology and access to broadband connection to see if they make a difference in the frequency of use and the academic and integrative use of the Web 2.0 applications relevant to this study.

Since much of the past research on Internet use was conducted utilizing a survey, it was deemed appropriate to utilize a survey for this particular study. The Web 2.0 applications are relatively new, and not much previous research on their use has been conducted. The researcher found it necessary to construct a unique survey based on several previously use surveys since no survey was located that exactly fit the research project. A paper and pencil survey was used to avoid a bias against students not comfortable using a computer and the Internet.

The sample was a convenience sample, and the data were collected from students at one medium-sized university located in the Southeastern part of the United States over two semesters from entry-level mass communication and journalism classes. A frequency analyses revealed that the minority population and nontraditional student population was unrepresentatively low. To correct that problem, data were collected from three other general education classes. The data collected from the three general education classes were sorted, and only the subjects considered minority or nontraditional were included in the sample. The final sample, is summarized in Table 1.  Although the frequency analyses revealed that there was a majority of Caucasians and females in the sample population, the demographics of the overall sample is similar to the overall student body population of the university. According to the university 2008-09 Fact Book, the student population was comprised of approximately 30% African-American, 70 % Caucasian, almost 60% females and 40% males ("Enrollment Fact Book 2008/2009," 2009).

Of the sample population, approximately one-half of the students indicated that they were majoring in mass communication and journalism; a few were undecided while the remainder were majoring in other disciplines. And overwhelming majority of subjects

had access to a computer with Internet connection at home, and most of them have had

such home access for greater than five years. Over 80% of the sample population had a

broadband home Internet connection of some type.

<center>Overall Frequency of Use</center>

Frequency analyses were run to determine the overall use of each of the Web 2.0

applications. The results of the analyses is summarized in Table 2 and suggests that

overall, the use of Web 2.0 applications is low. Uploading photos was the most popular

activity at 72% of the sample population, followed by creating Web pages at 52%,

blogging at 51% and uploading videos at 43%. One speculative reason the

aforementioned applications are utilized more frequently is that they have been in

existence for a longer period of time than the other applications. Videos and photos can

be easily created with cell phones, and blogging does not require advanced skills or any

special equipment other than a computer with Internet connection. The remaining four

applications used were very low with the use of social bookmarking being utilized by

only 22% of the sample population, use of collaboration suites employed by only 14%,

wikis used by only 13%, and creating podcasts by only 7.5% of the population. Almost

none of the sample population created a podcast, which is not surprising since research

suggests that only 19% of Internet users download podcasts and that only 17% of them,

do it on a daily basis (Madden & Jones, 2008). Creating a podcast takes more skill and

equipment than downloading one. If only 19% of the population download podcasts, it is

likely that even less will create them. Wikis, collaboration suites and social bookmarking

do not require special equipment or more advanced skills, however they are newer than

blogs, creating one's own Web page, uploading photos and videos. It may be that many students are unaware of them and, therefore, do not employ them.

Just because a student reports using a particular application does not mean that he or she uses the application on a regular basis. To determine how often each application was utilized, frequency analyses on the frequency of use were run. The results which are summarized in Table 3 suggest that many of the applications are not used on a regular basis. Photo uploading to sites such as Flickr, with 47.2% of the population utilizing the application on a monthly basis or more, was the most popular. Creating and updating a Web page came in second at 26.4% of students maintaining their Web sites at least once a month or more. Only 18.5% of bloggers updated their blogs, 15.5 % of social bookmarkers utilized their online bookmarks, and 11.5% of students collaborated in a collaborative suite such as Google Sites at least once a month or more. Less than 10% of the students created podcasts, used wikis or uploaded videos at least once a month or more. The most interesting finding of the analyses were that among the least used applications, both the use of collaborative suites and use of social bookmarks had a greater percentage of students reporting the use of these applications on a weekly basis than on a bi-monthly or monthly basis. This finding suggests that although the applications are relatively new, once they are tried, they are found to be very useful. The low frequency of video uploading, creating podcasts and using wikis is consistent with the findings of other scholars in that it is the top 8% of users who most frequently upload videos and create podcasts (Horrigan, 2007).

The Web 2.0 applications are relatively new with many of them coming into existence within the last five years. Although the Pew and American Life project has

completed extensive, ongoing research on Internet usage among the entire United States, little research has been found that attempts to find out if students utilize the specific Web 2.0 applications under analyses in this study for academic and personal integrative purposes.  As a result, within this study the second research question is posed to find out if students are using the applications for academic and personal integrative purposes. There is no independent or dependent variable for this question.

To answer the second question, two frequency analyses (one for academic purposes and one for personal integrative purposes) were run. The percent of the total number of users that were using an application for academic purposes at least sometimes was calculated. For the purposes of the analyses, an assumption was made that if rarely was indicated then a student almost never used the application for academic purposes. It was found that 53 (37%) students who uploaded photos did so for academic purposes at least some of the time. Of the 15 reported podcast creators, 12 (80%) created them for academic purposes at least sometimes. The majority of subjects who reported creating podcasts did so only one time or just a few times a year. It is also interesting to note that more subjects reported creating podcasts for academic purposes more often than the number reported creating podcasts overall. A speculation is that creating a podcast may have been done to fulfill a requirement for a class and then not utilized again. Podcast creation requires special equipment such as a microphone that may be available in a class computer lab but not possessed by the subject. In reality the subject may not normally create podcasts for various reasons including lack of equipment and, therefore, indicated on the survey that they never create podcasts. However, they may have created a podcast one time for a class and reported rarely for academic purposes on the survey. A total of

24 (28%) subjects who reported uploading videos to the Internet did so for academic purposes at least some of the time.  Only 26 (25%) bloggers used blogs for academic purposes at least some of the time. The frequency of creating or updating Web pages for academic purposes at least some of the time was even lower at 20 or 19% of the creators. A total of 20 out of 27 (74%) of wiki users utilized them for academic purposes at least some of the time. Forty-nine percent or 22 of the social bookmark users utilized them for academic purposes at least some of the time. A total of 20 (69%) collaboration suite users utilize them for academic purposes at least some of the time. Of the specific applications, creating podcasts, using wikis, social bookmarks and collaborative suites, where the number of users is less than 50, the percent of use for academic purposes is much higher. The data suggests that users who did use the applications, either used them to fulfill a requirement for a class, or they actually found them useful in their academic endeavors. The data generated from the analyses is summarized in Table 4.

The frequency analyses of the use of Web 2.0 applications for personal integrative purposes suggests that 46 (32%) users who upload photos, 10 (67%) podcast creators, 30 (35%) users  who upload videos, 31 (30%) bloggers, 22 (21%) Web page creators, 12 (44%) wiki users, 19 (42%) social bookmark users, and 16 (55%) collaborative suite users utilize the applications for integrative purposes at least some of the time. It is interesting to note that, with the exception of photo uploading, it is the applications with the lower number of users, creating podcasts, using wikis, social bookmarks and collaborative suites, that are used less for integrative purposes than academic purposes. One possible reason is that the less utilized applications may have been used only to fulfill a requirement in a class for many users. Another possible reason is that students

may not be as familiar with the lesser used applications and do not see the potential for integrative uses. Photo uploading is the most popular application, and it may be that students utilize that more for socialization or recreational purposes. The result of the analyses is summarized in Table 5.

<div align="center">Mass Communication and Journalism Majors</div>

Mass communication and journalism students are studying to become media professionals. The Web 2.0 applications in question are utilized by the media profession. It would be reasonable to assume that students majoring in mass communication and journalism will be more interested in employing the Web 2.0 applications and be more adept at using them for academic and personal integrative purposes than other students. No research was found that compared the means of mass communication and journalism students and other students' use of Web 2.0 application for academic and integrative purposes. The third research question within this study is posed to determine if students majoring in mass communication and journalism use Web 2.0 applications more frequently than students majoring in other disciplines. The fourth research question was posed to find out if mass communication and journalism students were employing the Web 2.0 applications for academic and personal integrative purposes more frequently than students majoring in other disciplines.  To answer the questions, first an independent sample t test was run to see if there was a difference in the overall frequency of use between the two groups. Second, two independent sample t tests (one for academic purposes and one for personal integrative purposes) were run to compare the means of the two groups. The independent variable for these analyses was academic major (mass communication and journalism majors and other), and the dependent variable was the use

of Web 2.0 applications. The overall results for all three analyses suggest that there is not a significant difference in the overall frequency of use or the frequency of use for academic and personal integrative between mass communication and journalism majors and students majoring in other disciplines.

Although data analyses from the overall frequency of use suggests that, in fact, students majoring in mass communication and journalism use all of the Web 2.0 applications except social bookmarking more frequently than other students, the difference is so small that it is not significant. At .015, only blogging is close to showing a significant difference $t(190) = .245$, p = .015 in the group means. However, with alpha set at .006, there is not a significant difference in the means of the two groups concerning the frequency of blogging. Overall, the results suggest that there is no significant difference between mass communication and journalism majors and non-mass communication and journalism majors in the frequency of utilizing the applications. The data generated from the frequency analyses are summarized in Table 6.

The independent sample t test run to compare the means of mass communication and journalism majors and other students' use of Web 2.0 applications for academic purposes revealed no significant difference between the means of the two groups. When looking closely at the means, the data suggests that mass communication and journalism students only utilize photo uploading, podcast creation, and blogging for academic purposes more than non-mass communication and journalism majors, but not significantly more. The use of collaborative suite was almost identical between the two groups, suggesting that collaborative suites are equally useful for academic purposes for all majors. Although the difference is not significant, the surprising finding of the data

analyses is that mass communication and journalism majors did not create and upload videos and Web pages more frequently for academic purposes. This finding is considered surprising because Web pages and videos are frequently utilized in the modern media industry. Data generated from the analyses are summarized in Table 7.

The independent sample t test run to compare the means of mass communication and journalism majors and other students' use of Web 2.0 applications for personal integrative purposes also revealed no significant difference between the means of the two groups. However, when looking closely at the means, the data suggests that mass communication and journalism students do utilize photo uploading, blogging, and collaborative suites for integrative purposes more than non-mass communication and journalism majors, but not significantly more. If alpha had been set at .05 instead of .006 the difference in the means of blogging $t(179) = 2.00$, p = .047 by mass communication students and non mass communication majors would have been significant. Conversely, students not majoring in mass communication and journalism utilize video uploading and social bookmarking more frequently than students majoring in mass communication and journalism. If alpha had been set at .05 instead of .006 the means of the two groups employing video uploading $t(151) = -2.59$, p = .010 and utilizing social bookmarking $t(177) = -2.05$, p = .042 would have been significant. The results of the analyses is summarized Table 8. The finding is surprising in that video clips are frequently utilized by the news media and one would assume that communication majors would want to demonstrate their video creation skills.

Surprisingly, since all of the applications are a means of communication, the data suggests that there are no significant differences in the means of use of the Web 2.0

applications between mass communication and journalism students and students majoring in other disciplines. Of the applications, only blogging showed even close to a significant difference in that mass communication and students were more likely to blog over all and for personal integrative purposes. This is not surprising since blogging is a means of creative writing and publication. What is surprising is that non-mass communication majors create and upload videos and Web pages for both academic and personal integrative purpose more than mass communication majors and the difference in uploading videos for personal integrative purpose is near significant. The finding is surprising because both applications are utilized frequently in the media industry. Overall, the data analyses suggested that mass communication and journalism students were not significantly different than other students regarding the use of the Web 2.0 applications.

<div align="center">The Digital Divide</div>

The third purpose of the study is to examine constructs associated with the digital divide that made a difference in the use of computer and Internet technology. Specifically, the current study examines gender, ethnicity, age, previous experience utilizing the technology and home access to a broadband connection to the Internet and the difference the constructs make in the frequency of use overall and the frequency of use for academic and personal integrative purposes. The digital divide and it's constructs are addressed in researched questions 5 through 14.

*Gender*

Gender is one construct associated with the digital divide and is addressed in research question 5. Much of the literature suggests that males will be more likely to

employ the Web 2.0 applications than females to post their creative works online.  The

premise is that women have more domestic responsibilities and less time for using the

Internet. Another premise is that in the past, the technology was marketed toward males.

Many of the games cater to male tastes, and since males tend to be more aggressive, they

occupy the few computers available in school before the females, thereby spending more

time on them. In fact, according to findings from the Pew Internet and American Life

project, most active Internet users comprising 31% of the American population is a

majority male population (Horrigan, 2007).  To answer the research question, an

independent sample t test was run comparing the means of the two groups. The

dependent variable was the use of the Web 2.0 applications, and the independent variable

was gender. The total sample contained 83 males and 118 females. Results of the t test

suggest that there is no significant difference in the use of any of the applications. Males

were more likely to upload videos than females. If alpha had been set at .05 instead of

.006 , the  difference between the means $t(199) = 1.81$, p =.072,  of the frequency of male

and female uploading video would have been near significant. Since alpha was set at .006

to avoid a Type 1 error, the difference was not close to significant. The fact that no

significant difference was found is surprising since research suggests men are more likely

to post their creative work online (Demoussis & Giannakopoulos, 2006; Hargittai &

Walejko, 2008; Horrigan, 2007).  Other research suggests males report more self-

efficacy and digital literacy skills than females in using the Internet (Hargittai & Hinnant,

2008; Jackson  et al., 2001). The findings of the data analyses suggests the divide

between the genders may be narrowing. Table 9 reflects the results of comparing the

means of the two groups, male and female, frequency of use of Web 2.0 applications.

There is the possibility that males and females utilize the Internet for different purposes. Because there is evidence in the research that suggests that males use the Internet more frequently than females, the sixth research question is posed to find out if gender makes a difference in the use Web 2.0 applications academic and personal integrative purposes. For this research question the independent variable is gender, and the dependent variable is the use of Web 2.0 applications for academic and personal integrative purposes. To answer the question, two independent sample t tests were run (one for academic use and one for personal integrative use) to compare the means of the two groups. The sample population for both t tests consisted of 83 males and 118 females.

The result of the first independent t test suggests that there is no significant difference in gender concerning the use of all of the Web 2.0 applications for academic purposes. The only application close to showing some significance is uploading videos. Upload videos $t(143) = 2.04$, p =.043  in the group means suggesting that males are likely to upload videos more frequently than females for academic purposes. If alpha had been set at .05 instead of .006, the difference would have been significant. Table 10 reflects the results on comparing the means of the two groups', male and female, use of Web 2.0 applications for academic purposes.

The results of the data analyses for the use of Web 2.0 applications for personal integrative purposes suggests that in all cases, with the exception of using a collaborative suite, males were more likely to use the Web 2.0 applications for integrative purposes than females, but not significantly so. Again the only application close to showing some significance $t(133) = 2.27$, p =.025  in the group means is uploading videos for personal

integrative purposes. This is not surprising since research from the Pew and American Life project suggests that the most active users of the Web 2.0 applications are male under the age of 40 (Horrigan, 2007). Hargittai and Walejko (2008) also found that men are more likely than women to post creative works online using some of the Web 2.0 applications because men are more experienced at using the Internet. The data also suggests that males and females used collaborative suites equally for integrative purposes. One plausible reason for this is that collaborative suites are much like using productivity software that is used by most students on a daily basis. Also, the use of collaborative suites is very low among all subjects, so the results should be viewed with caution. The overall results of the analyses of depicting the difference between male and female use of Web 2.0 applications for personal integrative purposes is summarized in Table 11. Overall, there were no significant findings in the difference of the means gender frequency of use for personal integrative purposes.

The results from the data analyses suggest that the gap in Internet use between males and females may be narrowing and becoming almost nonexistent, which is consistent with the findings in 2003 of the U.S. Department of Education's Institute of Education Sciences National Center for Education Statistics study (DeBell & Chapman, 2006). Overall, the only Web 2.0 applications females were likely to utilize more than males was uploading photos and blogging. Males reported utilizing all other applications, except use of collaborative suites, more than females. The use of collaborative suites was approximately equal between the two groups. Females were more likely to upload photos, use social bookmarks for academic purposes, and use collaborative suites for integrative purposes equally as much as males. With the exception of using collaborative suites,

males are more likely to use all of the Web 2.0 applications for integrative purposes and

creating podcasts, uploading videos, blogging, creating Web pages, using wikis and using

collaborative suites for academic purposes more frequently than females, but not

significantly so. Only uploading videos showed anything close to a significant difference

in the means of the two groups. The fact that more males upload videos and create Web

pages, which require more skill, and more females post to blogs and upload photos

suggests that males may be more skilled at utilizing Internet technology than females and

confirms the Hargittai and Walejko (2008) study that males are more likely to post videos

while females are more likely to post poetry (Hargittai & Walejko, 2008). In general data

analyses does suggest that males are more likely to use them for productive activities that

have potential to enhance upward mobility and females are less likely to utilize them

overall but not significantly so. Since there was no significance in the use of any Web 2.0

applications in terms of overall frequency of use and frequency of use for academic and

integrative purposes, the answer to research questions and 5 and 6 is that there are no

differences in the genders in utilizing the Web 2.0 applications.

*Ethnicity*

Another construct associated with the digital divide is ethnicity. This factor has as

much to do with socioeconomic status as ethnicity. Research suggests that persons with

low incomes or families where the parents lack a high school education are less likely to

have home access to computer and Internet technology (DeBell & Chapmann, 2006;

Demoussis & Giannakopoulos, 2006; Howard et al., 2001; Lenhart et al., 2005; Madigan

& Goodfellow, 2005; Oblinger & Oblinger, 2005; Roberts et al., 2005). A larger

percentage of the African-American population in the United States have a lower than

average household income (United States Census Bureau, 2007). The low income makes it more difficult to purchase a computer and pay Internet subscription fees. As a result, a larger percentage of African-American families than Caucasian families do not have home Internet access and, therefore, use the Internet less. If there is a difference in home Internet access among the two races, then there should be a difference in their use of the Web 2.0 applications. Research questions 7 and 8 are posed to find out if ethnicity makes a difference in the overall frequency of use and the overall frequency of use for academic and personal integrative of the Web 2.0 applications. For both questions, the independent variable was ethnicity and the dependent variable use of the Web 2.0 applications.

To test the research question 6, does ethnicity make a difference in the overall frequency of the Web 2.0 applications; an independent sample t test was run to compare the means of the two groups. The sample population consisted of 122 Caucasians and 68 African-Americans. The 11 subjects who reported "other" as race were factored out of the population for the purpose of the analyses. Upon comparing the means of the two groups, with the exception of social bookmarking and collaborative suite use in which the means are almost equal, all of the applications are utilized more by Caucasians than African-Americans. Moreover, data analyses suggests that there is a significant difference $t(179) = 3.23$, p <.006 between the means of the two groups engaging in uploading videos. This is not surprising since it is the most active Internet users who would most likely utilize the Web 2.0 applications, and although ethnically diverse, the majority is Caucasian males (Horrigan, 2007). Also, uploading videos requires more technical literacy and a broadband connection. Research suggests that a higher percentage of Caucasians than African-Americans have broadband access (Horrigan, 2008). The data

also suggests a significant difference $t(158) = 2.77$, p $=.006$ in the means of the two groups' use of blogs. This finding is surprising because blogging does not require advanced technical skills and at least some research suggests that when compared to the entire Internet using population, a disproportionately high percentage of African-American young adults blog (Lenhart & Fox, 2006). The results of the data anlyses does suggest that Caucasians will upload videos and blog significantly more frequency than African-Americans. For all other applications, the mean difference is not significant. See Table 12 to view the results of the analyses

If Caucasians are more likely than African-Americans to employ the Internet and Web 2.0 applications overall, then it would follow that they would also be more likely to employ the applications for academic and personal integrative purposes. To answer the question does ethnicity make a difference in the frequency of use of, the Web 2.0 applications, two independent sample t tests were run (one for academic and one for personal integrative purposes) to compare the means of the two groups. For both analyses, the same sample population was utilized, consisting of 122 Caucasians and 68 African-Americans, which were used for the frequency analyses comparing the means of the two groups. As previously stated, the 11 subjects who reported other as race were factored out of the population for the purpose of the analyses. The results of the analyses comparing the means of Caucasian and African-American use of Web 2.0 applications for academic purposes suggest that with few exceptions, Caucasians are more likely to utilize the applications for academic purposes, but not significantly more. This is not surprising since some of the applications require broadband, and research suggests that the broadband connection gap between Caucasians and African-Americans is narrowing

(Horrigan & Smith, 2007). If alpha had been set at .05 instead of .006, the data $t(181) = 2.12$, p = .036 would have suggested that Caucasians created podcasts significantly more often for academic purposes than African-Americans.  Again this is not surprising since previous research suggests that it is the most active Internet users who would most likely utilize the Web 2.0 applications, and although ethnically diverse, the majority is Caucasian males (Horrigan, 2007). However, the frequency of creating podcasts is so low that the data should be viewed with caution. The data suggests that none of the Web 2.0 applications are utilized significantly more by either race for academic purposes. See Table 13 for the summary of the data analyses.

Upon comparing the means of Caucasian and African-American use of Web 2.0 applications for personal integrative purposes generated from the statistical analyses, it appears that with the exception of social bookmarking and use of collaborative suites, Caucasians are more likely to use the applications for integrative purposes as well. Although no significance difference was found in the means of the two groups for any of the applications, if alpha had been set at .05 instead of .006, there would have been a significant difference $t(92) = -2.12$, p = .037 in the use of social bookmarking. African-Americans are close to employing social bookmarking for personal integrative purposes significantly more than Caucasians. This is an interesting finding, and no research was found to back this up.  However, the overall use of social bookmarking by the entire population was low, and the results should be viewed with caution. The data for the analyses are reflected in Table 14.

Overall, the data suggests a significant difference between the means of the two groups, Caucasian and African-American frequency of uploading videos and also a

significant difference between the two groups in the frequency of blogging, both

indicating that Caucasians utilize them more frequently. When comparing the means of

the two groups of all three tests (frequency, academic use and integrative use) the data

consistently suggests that African-Americans are more likely to use social bookmarking

and collaborative suites than Caucasians, but not significantly more. The data also

suggests that African-Americans are more likely to use wikis for academic purposes than

Caucasians, but are almost equal in the use of wikis for integrative purposes. The results

should be viewed with caution since the frequency of use analyses suggests that wikis,

social bookmarking and collaborative suites are not frequently used overall. For the

majority of the applications, Caucasians are more likely to utilize the applications more

frequently for academic and integrative purposes than African-Americans, but not

significantly more. This suggests that Caucasians may be more adept at employing the

applications for academic and integrative purposes, which potentially enhances their

opportunities for social upward mobility. Based on the data analyses concerning ethnicity

Caucasians are significantly more likely to blog and upload videos more frequently

overall than African-Americans, but not significantly more for academic and personal

purposes.. Concerning all of the Web 2.0 applications for overall frequency of use and for

the frequency of use for academic and personal integrative purpose there was no

difference.

*Age*

A third factor associated with the digital divide that made a difference in the use

of computer and Internet technology is age. The most active Internet users are 40-years

old or younger (Czerniewicz & Brown, 2006; Demoussis & Giannakopoulos, 2006;

Horrigan, 2007). The premise is that younger individuals grew up with the technology and are, therefore, more experienced at utilizing it. Older individuals over the age of 40 are less likely to have grown up with a computer and Internet technology so the technology can be very intimidating. In college, it is difficult to find a large enough sample over the age of 40. Because it is difficult to find students over the age of 40, for the purpose of this study, the age groups are categorized into two groups: 18-20 year old students labeled traditional and 21-65 year old students labeled nontraditional. Based on the literature review that younger adults go online more often and engage in a wider variety of activities in general (Howard et al., 2001). Because it is not likely that there is a representative sample of students over the age of 40, two research questions were posed. To answer the questions do traditional students students utilize the Web 2.0 applications more frequently than older nontraditional students overall and more frequently for academic and personal integrative purposes, three intependent sample t tests were run to compare the means of the two groups. The population of the sample consisted of 119 traditional students and 82 nontraditional students. The independent variable was age and the dependent variable was the frequency of use of Web 2.0 applications. The results of the data analyses suggest that there are no significant differences in the means of the two group's use of Web 2.0 applications overall and for academic and personal integrative purposes.

Regarding frequency of use of the Web 2.0 applications which are addressed in research question 9, traditional students upload web pages more frequently overall, but not significantly more. If alpha had been set at .05, the data suggests that there would have been a significant difference $t(192) = 2.05$, p = .042 in the means of the two groups.

The difference in the means of the two groups for all other applications is very minimal and not significant. The results are not surprising in that the literature suggests younger adults go online more often and engage in a wider variety of activities (Howard et al., 2001). Since the age group of nontraditional students is 21-65, many of them are probably under 40 years of age and research suggests that persons under the age of 40 are the most active Internet users. (Czerniewicz & Brown, 2006; Demoussis & Giannakopoulos, 2006; Horrigan, 2007). The data for the analyses can be viewed in Table 15.

Just because the traditional students appear to be using most of the Web 2.0 applications more frequently does not mean they are employing them for academic and integrative pruposes. Research question 10 poses to find out if if there is a difference in the means to the two groups traditional and nontraditioal students' frequency of use of the Web 2.0 applications for acdemic and personal integrative purposes. To answer the questions, two independent sample t tests (one for academic and one for personal integrative purposes) were run to compare the means of the two groups. The population of the sample for both analyses consisted of the same 119 traditional students and 82 nontraditional students used to compare the means of traditional and nontraditional students in the frequency of use analyses.

The results of the analyses for academic purposes were surprising. Although the difference in the means for both groups were minimal, and non significant, for all applications, the nontraditional students reported using the Web 2.0 applications more frequently for academic purposes than the traditional students.  Perhaps the reason for that finding is the older students are more mature and wiser or are more focused on

academics than younger students. Also the younger students may still be acclimating to being away from home for extended periods of time and may be employing the applications for social purposes. The results should be viewed with caution since some of the applications have a very low rate of usage overall. A summary of the data are reflected in Table 16.

Again, the results of the analyses comparing the means of traditional and nontraditional use of Web 2.0 applications for personal integrative purposes suggest that nontraditional students are more likely to utilize all of the Web 2.0 applications for integrative purposes than traditional students, but not significantly more. Since many of the applications have low usage, the results should be viewed with caution. Table 17 reflects the data generated from the analyses. Based on the data analyses in this study, the answer to research question 10 is that age does not make a difference.  Again, many of the students in the age group of 21-65 may be under the age of 40.  If most of them were age 41 or older the results may have been different.

When analyzing the frequency of use of the Web 2.0 applications by traditional and nontraditional students, there is very little difference. When analyzing the difference between traditional and nontraditional students' use of Web 2.0 applications for academic and integrative purposes for all applications, the nontraditional students utilize them more, but not significantly more. The premise of the digital divide suggests that older persons who did not grow up with computers in their home would be less adept at using the technology and, therefore, use it less often. However, many of the nontraditional students in the sample population were likely to be under the age of 40 and could have had access to the technology most of their lives.  In this regard, the results are not

surprising. The frequency of use results suggest that the traditional students may utilize

the applications  more often for other reasons such as socialization, recreation or to stay

in contact with family and friends than for academic and integrative purposes. Since there

were no significant findings, the answer to the research questions concerning age, there is

no significant difference at least between the two age groups examined within this study.

*Experience*

A fourth construct related to the digital divide is previous experience using the

Internet. Research suggests more experienced users are the users who are most likely to

post creative work such as podcasts, blogs and Web pages online (Hargittai & Walejko,

2008; Horrigan, 2007; Madden & Jones, 2008). For the purpose of this study, experience

was determined by the length of time a student reported having access to a home

computer with Internet access while growing up. The population was divided into two

groups, those who reported having a computer with Internet connection in their home for

five years or less and those who had home access to a computer with Internet connection

for greater than five years. The greater than five years and five years or less experience

grouping was used for this study because findings of the Pew Internet and American Life

projects suggests that persons with five years or less using the Internet use fewer

technology applications overall (Horrigan, 2007). However, public access to the Internet

in schools, public libraries and Internet cafes are more prevalent and the sample

population had Internet access available on the college campus. Although a student may

not have had home access to a computer with Internet connection for the last five years, it

may have been available to them somewhere else.  Conversely, just because a student had

home access to a computer with an Internet connection at home for greater than five

years does not mean they utilized it. Research questions 11 and 12 is posed to find out if students who had home access to a computer with Internet connection for greater than five years will utilize the Web 2.0 applications more frequently over all and more frequently for academic and personal integrative purposes than students who had home access to a computer with Internet access for five years or less. The independent variable is the prior experience using the Internet, and the dependent variable is the use of Web 2.0 applications. For the purpose of the analyses, subjects who did not have home access to the technology and who did not specify the number of years they had home access were factored out of the data analyses. The final sample included 41 subjects with five years or less and 132 subjects with greater than five years of home access to the technology. To even out the sample sizes, 44 subjects were randomly selected from the group with home access to the technology greater than five years by selecting every third subject. Frequency analyses were run on the demographics of the 44 subjects selected for comparison. After the analyses were run, three more subjects were randomly eliminated to assemble a sample that was more equitable in demographics. The final groups comprised of 40 subjects with home access to the technology for five years or less and 41 subjects with home access to the technology for greater than five years.

To find out if there was a difference in the frequency of the use of Web 2.0 applications between the two groups, an independent sample t test was run to compare the means. Upon analyzing the data, it appears that students who have had home access to the technology greater than five years utilize all of the Web 2.0 applications, with the exception of uploading photos and use of collaboration suites, more frequently than students who had home access to the technology for five years or less, but not

significantly so and in many cases the difference was minimal. Concerning photo

uploading and use of collaboration suites, the difference in use between the two groups is

very small. If alpha had been set at .05 instead of .006, only creating podcasts would have

shown a significant difference $t(45) = -2.38$ p < .05 in the means of the two groups. The

results of the analyses should be viewed with caution since the sample size was small and

the use of some of the applications was very low. Overall the results are surprising

because those with home access to a computer with Internet access for less than five

years would most likely have less time and less experience using the technology and

therefore the difference in the means of the two groups should be more pronounced.

Uploading photos is a popular activity and using collaborative suites does not require

advanced skills or a broadband connection. Furthermore, it is an activity that may be

required at one's place of employment. It is not surprising that the difference in the

means of the overall frequency of use for uploading photos or use of collaborative suties

is minimal. The answer to research question 11 inquiring to find out if experience makes

a difference in the overall frequency of use of the Web 2.0 application is no, it does not

make a significant difference. A summary of the data generated from the analyses are

reflected in Table 18.

Research question 12 is posed to find out if students with five years or less

experience using the Internet will use the Web 2.0 applications less frequently, for

academic and personal integrative purposes than students who have had experience using

the Internet for greater than five years. The independent variable is the prior experience

using the Internet, and the dependent variable is the use of Web 2.0 applications. The

sample population consisted of the same 81 subjects examined in the previous analyses.

To answer the question, two independent sample t tests (one for academic and one for personal integrative purposes) were run to compare the means of the two groups. The results of the analyses suggest that the difference in the means of the two groups concerning the frequency of use of the Web 2.0 applications for academic purposes and also personal integrative purposes is minimal and not significant. The results of the analyses should be viewed with caution since the sample size was low and, in many cases, the usage rate of the applications was low. The data for the analyses are summarized in Table 19 and Table 20.

Upon reviewing all three analyses, overall frequency of use, and frequency of use for academic use and for personal integrative use, it is interesting to note that only the use of collaborative suites was utilized more frequently by the group who had home access to a computer with Internet technology for five years or less, but never significantly more. A speculative reason for this is that collaborative suites are easy to use and similar to productivity software that students are already familiar with. For students who also work, use of a collaborative suite may be an application used in their job. It may be a result of their familiarity, that they are utilized more often by the students who have less exposure to the Internet technology. The results also suggest overall that students who have been exposed to the technology for a longer period of time are more likely to utilize more of the Web 2.0 applications for various reasons including academic and integrative purposes, but again not significantly so. Since there was nothing significant in the data analyses, the answer to questions 11 and 12 is there is no difference in means of the experience group and the non experienced group in the overall frequency of use and the frequency of use for academic and personal integrative use of Web 2.0 applications.

*Convenient Access to a Broadband Connection*

A fifth construct related to the digital divide is convenient access to a broadband connection. Broadband is important because those with broadband connection go online daily and engage in a wider variety of activities than dial-up users (Horrigan & Smith, 2007; Horrigan, 2008; Lebo, 2001; Matthews & Schrum, 2003; Watson et al., 2004). Also the use of some of the Web 2.0 applications is more efficient when using broadband as opposed to dial-up.  Research questions 13 and 14 in quire to find out  if there is a difference in the overall frequency of use and a frequency of use for academic and personal integrative purposes between students who have home accesss to a boradand connection and those who do not. For these questions, the independent variable is the Internet connection type, and the dependent variable is the use of Web 2.0 applications. To determine the number of subjects with home broadband Internet connection and the number of subjects with dial-up,  frequency analyses were run. The choices the subjects had were dial-up, DSL, cable, wireless, fiber-optic, other, don't know and no Internet connection. For the purpose of this study, DSL, cable, wireless, and fiber-optic were considered a broadband connection. Of the total sample population of 201, only 11 members reported having a dial-up connection while 167 reported having home broadband access. Only 14 reported having no home Internet access, eight did not know what type of home Internet access they had, and one reported other, totaling 23 subjects. Since the connection type was nonexistent or unable to be determined by the 23 subjects reporting no home Internet access, don't know or other were factored out. The remaining population consisted of 11 dial-up users and 167 broadband users. As a result of a large

difference (156) between those with home broadband connection and those with dial-up, to compare the means of the two groups, many of the subjects with home broadband access were factored out. To come up with a representative group of broadband users, the subjects were sorted by survey ID, and every fifteenth subject was selected to remain in the analyses. The final sample of broadband users was comprised of one fiber-optic, one DSL, two cable and seven wireless connections totaling 11 broadband users. To create two groups, all of the members of the broadband users were re-coded as "high-speed," and the dial-up group remained labeled as dial-up. The final sample used in the analyses was comprised of 22 subjects, 11 dial-up users and 11 broadband users and included a proportionally represented sample of gender, age, ethnicity, and academic major.

To answer the questions 13 and 14 does a home broadband connection make a difference in the overall frequency of use and the frequency of use  for academic and personal integrative purposes, three independent sample t tests were run. The first t test was run to determine the difference in the means of broadband users and dial-users in the overall frequency of use Web 2.0 applications.  The second and third t tests were run to determine the difference in the means of the two groups on the frequency of use of the Web 2.0 applications for academic purposes and also personal integrative purposes.

The results of the independent sample t test comparing the means of the two groups in their overall frequency of use suggest suggests broadband users utilize all of the Web 2.0 applications more frequently than dial-up users but not significantly more This finding is surprising. One would expect to find some significant differences since broadband it is always on and dial-up is not. Using a dial-up connection, data travels at a much slower speed, and it takes much longer to load high graphic material that is often

found on the Web and is associated with uploading videos and Web pages. Although not significantly so, the results of the analyses concur with the research which suggests that consumers with broadband connection at home are more likely to be daily Internet users and are more likely to engage in a wider variety of online activities (Horrigan, 2008; Lebo, 2001; Matthews & Schrum, 2003; "Online World," 2006; Watson et al., 2004). Results of the analyses are summarized in Table 21.

Since the research suggests that broadband users use the Internet on a more frequent basis, they are also more likely to use the Web 2.0 applications for academic and personal integrative purposes than dial-up users. To find out if broadband users utilize the Web 2.0 tools more frequently than dial-up users for academic and also personal integrative purposes, a second and third independent sample t test (one for academic and one for personal integrative purposes) were run on the same population to compare the means of the two groups. Overall the data suggests that broadband users utilize the applications more frequently than dial-up users for both academic and personal integrative purposes but not significantly so.

The results of the data analyses for academic purposes suggest that, with the exception of creating a podcast, students with home broadband Internet connection utilize the applications more frequently but not significantly so. The mean of the two groups' use of podcasts for academic purposes is equal, suggesting that there is no difference. However, the activity of creating podcasts is very low among the entire population so the results should be viewed with caution. If alpha had been set at .05 instead of .006, photo uploading was the only application that would have shown a significant difference $t(12) =$

-2.34, p = .037 in the means of the two groups use for academic purposes. The data

generated from the analyses is summarized in Table 23.

The analyses results suggest that for all of the Web 2.0 applications with the

exception of podcasts, broadband users utilize the applications more frequently for

personal integrative purposes than dial-up users, but not significantly so. This is not

surprising since the data suggests that students with home broadband Internet connection

utilize the applications more frequently in general. What is surprising is that there is no

significant finding. The mean of the two groups' use of podcasts for integrative purposes

is equal suggesting that there is no difference the mean between the two groups

concerning creating a podcast. However, the activity of creating podcasts is very low

among the entire population so the results should be viewed with caution. If alpha had

been set at .05 instead of .006, photo uploading was the only application that would have

shown a significant difference $t(20) = -2.09$, p = .049 in the means of the two groups use

for personal integrative purposes. The result of the data generated from the analyses is

summarized in Table 23.

To obtain a better understanding of how much more broadband users employed

the Web 2.0 applications than dial-up users, a frequency analyses were run on the "yes"

and "no" response of the survey for each application. Since this was a frequency count,

there was no dependent or independent variable for the analyses. The results of the data

analyses suggests that no dial-up users create podcasts, use wikis or collaborative suites.

Creating podcasts and using wikis and collaborative suites is very low for broadband

users as well. Using social bookmarking is also not utilized by a large percentage of the

members of either group. When reviewing uploading photos, only 36% of dial-up users

report that they upload photos, whereas 100% of broadband users upload photos. Not surprisingly, the percentage of dial-up users uploading videos (18%) and creating Web pages (27%) is much lower than the percentage of broadband users who upload videos (45%) and create Web pages (64%). This is because dial-up is much slower than broadband, and uploading videos and creating Web pages would be too time-consuming using dial-up. The data generated from the analyses are reflected in Table 24.

Upon comparing the means of the two groups, broadband users employed the applications more often than dial-up users, but not significantly more. Also, it was found that the broadband users employed all of the applications, with no exception for both academic and integrative purposes, more than dial-up users, but not significantly more. If alpha had been set at .05, broadband users would have uploaded photos for academic and integrative purposes significantly more frequently than dial-up users. When viewing the results of the analyses, one must consider that no dial-up users created a podcast or used a wiki. It is not surprising that dial-up users utilize the applications less often since the connection to the Internet is slow and sometimes unreliable. The surprising finding in this analyses was that other than uploading photos, there was not a significant difference in other high bandwidth requiring applications such as uploading videos between the means of the two groups. This may be a result of the low overall usage of the application. One should consider that if the groups had been larger, or the usage more widespread among the sample population, the mean differences may have become more pronounced. Overall the findings are consistent with other research in that broadband users will use the Internet more often for a wider variety of activities (Horrigan, 2008; Lebo, 2001; Matthews & Schrum, 2003; "Online World," 2006; Watson et al., 2004).

In general, the results suggest that photo uploading is the most popular activity among all of the Web 2.0 applications, although often it is not done for academic or personal integrative purposes. Uploading videos and creating blogs and Web pages were also popular activities among students. One surprising finding was the low use of social bookmarks and collaborative suites. The use of social bookmarks allows users to access their Internet bookmarks from any computer with Internet connection. They also provide a means for meeting and networking with persons who have similar interests. Collaborative suites allow students to work on a document or presentation asynchronously without the use of e-mail. It is also another place to back up one's work. Using social bookmarks and collaborative suites does not require advanced skills, can be particularly useful in an academic setting, and with the social-networking capability, social bookmarks have potential to enhance one's social upward mobility. It may be that they are too new and most Internet users have not realized their full potential. Overall, the results of the data analyses suggest the percentages of the population who utilize even the most popular applications on a weekly basis is very low, suggesting that at least concerning the applications in question, they are generally not a source of distraction.

<div align="center">Conclusion</div>

The present study aspires to find out if students are utilizing some of the Web 2.0 applications and if so, how frequently are they utilizing them. One assumption of the study is the  that college students have a need to enhance or facilitate their academic activities and to market themselves for future employment since they are both reasons to be in college. If a student is using a medium frequently for reasons other than academic and integrative purposes then it can become a distraction. The current study also aspires

to find how frequently college students utilize the Web 2.0 applications for both

academic and integrative purposes. The media relevant to this study include uploading

photos to photo-sharing sites, creating podcasts, uploading videos to video-sharing sites,

creating blogs, creating Web pages, and collaborating through wikis, social bookmarking

and collaborative suites. Most of the applications are communication tools and employed

in the media industry. The particular Web 2.0 applications examined in this study were

chosen because of their relevance to the current media industry. Since many of the

applications are communication tools and employed in the media industry it is assumed

that students majoring in mass communication and journalism will have a heightened

interest in utilizing the applications for academic and personal integrative purpose more

than other students. A second purpose of the study is to find out if students majoring in

mass communication and journalism do utilize the Web 2.0 applications more frequently

overall and also more frequently for academic and personal integrative purposes than

students majoring in other disciplines. The third purpose was to find out if gender,

ethnicity, age, previous experience using Internet technology, and home broadband which

are all constructs of the digital divide, make a difference in the overall frequency of the

use of the Web 2.0 applications and the use of the Web 2.0 applications for academic and

personal integrative purposes.

The study found that of all the Web 2.0 applications examined, uploading photos

was the most popular with 76% of the population uploading  photos.  Creating Web pages

and blogging came next at a little over 50% of the population each. Close to 43% of the

population uploaded videos while less than 25% of the population utilized the other four

applications. The data also suggests that all of the applications except for uploading

photos were utilized by less than 25% of the total users for each application for academic and also personal integrative purposes. The low overall frequency of use suggests that the Web 2.0 applications are not a distraction keeping students away from their academic and personal integrative pursuits. Conversely the very low use of the applications by the total users for academic and personal integrative purposes suggests that few students are utilizing them to enhance the potential for social upward mobility. Concerning mass communication and journalism, students, the study found that they are not significantly different than students majoring in other disciplines in terms of overall frequency of use and also frequency of use for academic and personal integrative purposes. Upon examining the various constructs of the digital divide, gender, ethnicity, age, experience utilizing the Internet technology and access to a home access to a broadband connection, only ethnicity showed a significant difference in the overall frequency of use in using the applications. Specifically, the data suggests that Caucasians are significantly more likely to upload videos and blog than African-Americans. Upon analyzing the data concerning uploading videos and blogging for academic and personal integrative, the significant difference disappears. Overall, within the study, other than the significant finding in the ethnicity data, no other significant differences were found.

In general, what the study found is that not many students are not utilizing the Web 2.0 applications very frequently to enhance their academic pursuits and for personal integrative purposes. This is especially important to mass communication and journalism students as well as other students because students are being trained for the job market and many of the applications are utilized in the business arena. The findings are also important because according to Bandura (2002), "A major goal of education is to equip

students with intellectual applications and self-regulatory capabilities to educate themselves throughout their lifetime" (p. 281). The Web 2.0 applications are a means to get information by way of networking with others.  Ensuring that students leave college with the ability to utilize the networking capabilities to collaborate at a distance and to access needed information when needed will provide students with the intellectual applications needed to achieve their goal. Students, who know how to utilize the Web 2.0 applications for academic and personal integrative pursuits, enhance their potential for social upward mobility. That skill gives them an advantage over those who do not know how to utilize the applications.  For college instructors, the study is important because the data suggests that many students are not utilizing the applications for academic and personal integrative purposes.  That information may provide reason for instructors to utilize the applications in their assignments at the same time providing students with the knowledge of how to utilize the applications for their future academic and personal integrative pursuits.

Does the digital divide still exist? That is an important question, because persons who have access to the Internet the skills to use it to acquire need information and enhance their upward social mobility have an advantage over those who do not have the access. Based on this study alone, that is a question that is difficult to answer.  First of all, the study only examined gender, ethnicity, age, previous experience utilizing the Internet and home access to a broadband connection.  The study did find some significant findings in the overall frequency of use in the area of ethnicity.  This may suggest that some aspects of the digital divide still exist, but the findings from one study are not conclusive. Furthermore there are other constructs of the digital divide such as

socioeconomic status that was not examined in this study.  All of the subjects came from

one college in one stated located in the southeastern part of the United States, and

therefore does not represent the entire population. The state in which the college is

located is a state where the overall average income is lower than most other states in the

union.  It is also one of the last states in the union where 49% of the population adopted

broadband Internet connection.  If the same study were conducted in other states in

different parts of the country, the results from the data analyses may be quite different.

Compared to other states or colleges, perhaps a digital divide still does exists and the

college and state from which the sample population came is on the disadvantaged side of

the digital divide.

<div align="center">Limitations of the Study</div>

Although the data analyses of the study itself yielded some interesting findings,

there are several limitations to the study. First, the data for the present study was

collected by a paper-and-pencil survey and, as is the case with survey research, the

information that was collected is self-reported. The information reported by the subjects

may be affected by what the subjects think the researcher wants to hear, by how they feel

that day, by a possible need to look more knowledgeable or skilled than they are, or a

host of other confounding variables that are unable to be controlled by the researcher.

Furthermore, some of the sample population may have forgotten about what they have

done in the past, or they might over or underestimate their frequency of use. As a result,

some of the data collected may have been misrepresented.

Second, the research instrument itself was self-constructed by the researcher.

Although the overall survey was tested and retested and deemed 74% reliable, a

Cronbach's alpha yielded a .59 on the frequency scale portion of the survey which is lower than the .70 deemed acceptable. Therefore, parts of the research instrument may not be as internally consistent and reliable as desired.

Third, the sample was a convenience sample, and all of the subjects came from a single university in the Southeastern part of the United States. Therefore, the results of the current research project cannot be generalized to the entire population of the United States, and the overall research project lacks external validity.

Fourth, the reported use of half of the applications was so low that the results of the analyses should be viewed with caution. For at least two of the independent variables, the number of reported users of dial-up and the number of subjects reporting five years or less of home Internet access was so low that many of the subjects in the opposing groups had to be factored out. As a result, the number of subjects for those particular data analyses were extremely low. Finally, there are many other applications on the Internet that might serve the same purposes as the applications analyzed. It could be that students are utilizing different applications to accomplish the same purposes.

Despite the limitations, there is value in the study in that, in many cases, it confirmed the findings of other studies. In addition, the analyses suggested a low use of many of the Web 2.0 applications. Even of the applications that were utilized more frequently, they were not utilized often for academic and integrative purposes, tasks which have potential to enhance a person's chances for social upward mobility. Perhaps the results of this study can be utilized by professors in certain classes to determine if and how to incorporate the applications into their curriculum, teaching students how to utilize them for academic and integrative purposes.

Future Research

Because the sample of the present research was a convenience sample, small and taken from a single university in one area of the United States to validate the findings and possibly make them applicable to the entire country, the study should be carried out in several other colleges in various representative geographical areas of the United States. The present study did not require students to provide a reason as to why they did not employ a particular application or if they were enhancing their academic and integrative endeavors by, utilizing different Internet applications not included in the study. The study also did not require the subjects to reveal whether they thought the applications were useful to their academic and personal integrative endeavors. Further research should be conducted to find out if students are utilizing other Internet applications for academic and integrative purposes. Another study should be conducted to find out if the students know about the Web 2.0 applications and are aware of their of their potential uses in their academic and integrative endeavors. Some of the applications that were examined in the present study may be more useful to some mass communication and journalism students than others. For example, a person majoring in photojournalism might find photo uploading more useful, while a student in broadcast journalism might find creating podcasts more useful. More research needs to be conducted to find out if certain applications are utilized more by students of specific majors than others. Finally, the Web 2.0 applications analyzed in the present study are a relatively new media. The frequency and widespread use of them may change over time. Therefore, it would be prudent to conduct the research again at specific intervals in time, such as every two or maybe every five years, to find out if the frequency of use and the purpose of use changed over time.

APPENDIX A

USE OF WEB 2.0 APPLICATIONS SURVEY

**Directions:** This is an anonymous survey. Please do not put your name anywhere on the survey.

**Demographics**

**Indicate your answer by putting an "X" on the appropriate line next to the answer**.

1) What is your age?

_____ 18 – 20          _____ 21 and older

2) What is your race?

\_\_\_\_\_ Caucasian          _____ African-American    _____ Other

3) What is your gender?

_____ Male          _____ Female


4) Are you currently majoring in mass communication and journalism?

_____ Yes          _____No      _____Don't know


5) If you are majoring in mass communication and journalism, what is your field of study (photojournalism, journalism, public relations,  radio broadcasting, etc.)?


6)  Do you have access to a computer with Internet access at home?

_____ Yes          _____No      _____Don't know

7) About how long have you had access to a computer with Internet access at home?

\_\_\_\_\_  If less than a year, please write the number of months.
\_\_\_\_\_  If a year or more, please write the number of years.

8) How does your home computer connect to the Internet?

      _____ Dial-up telephone line
      _____ DSL-enabled phone line
      _____ Cable modem
      _____ Wireless connection (either "land-based" or "satellite")
      _____ T-1 or fiber-optic connection
      _____ Other
      _____ Don't know

An Internet photo-sharing site is a place where an entity such as Flickr or Photobucket provides free space on the Internet for a user to store and share photos with family, friends or general public or to insert in a document.

9) Have you ever uploaded photos to the Internet using Flickr, Photobucket or another photo-sharing site?

_____ Yes    _____No

10) How often do you upload photos to the Internet photo-sharing sites?

      _____ Weekly
      _____ About twice a month
      _____ About once a month
      _____ A few times a year
      _____ I have uploaded photos only one time.
      _____ I don't upload photos to a photo-sharing site.

A podcast is a digital audio file similar to a radio broadcast that can be uploaded to the Internet for sharing with family, friends or public consumption.

11) Have you ever created a podcast?

_____ Yes    _____No

12) How often do you create podcasts?

      _____ Weekly
      _____ About twice a month
      _____ About once a month
      _____ A few times a year
      _____ I have created a podcast only one time.
      _____ I have never created a podcast.

13) Have you ever created a video and uploaded it to YouTube or another video-sharing site?

_____ Yes    _____No

14) How often do you create and upload videos to the Internet?

_____ Weekly
_____ About twice a month
_____ About once a month
_____ A few times a year
_____ I have created and uploaded videos only one time.
_____ I don't upload videos to a video-sharing site.

A blog is an online journal where one can post their thoughts or knowledge of a subject matter and add photos, videos and links to other relevant Web sites. The readers have the ability to post comments.

15) Have you ever created a blog?

_____ Yes    _____No

16) How often do you post to your blog?

_____ Weekly
_____ About twice a month
_____ About once a month
_____ A few times a year
_____ I have a blog but don't update it on a regular basis.
_____ I don't have a blog.

17) Have you ever created a personal Web page and uploaded it to the Internet?

_____ Yes    _____No

18) How often do you update your Web page?

_____ Weekly
_____ About twice a month
_____ About once a month
_____ A few times a year
_____ I created a Web page but no longer maintain it.
_____ I don't have a personal Web page.

A wiki is an easily created Web site where several users can collaborate by adding or editing text or adding pictures and video from any computer connected to the Internet.

19) Have you ever created a wiki or collaborated with someone else using a wiki?

      _____ Yes    _____No

20) How often do you create, edit, add to or collaborate with others in a wiki?

      _____ Weekly
      _____ About twice a month
      _____ About once a month
      _____ A few times a year
      _____ I have created, edited or collaborated in a wiki.
      _____ I have never created or edited a wiki.

A social bookmarking site is a site on the Internet where one can save and organize by tagging all of their most used Web sites. The favorites can be accessed from any computer with Internet connection and can be shared with other users who have the same interests.

21) Do you currently maintain a list of your favorite Web sites on a social-bookmarking site such as Del.icio.us to access from any computer with Internet connection and to share with others?

      _____ Yes    _____No

22) How often do you add to your online bookmark list?

      _____ Weekly
      _____ About twice a month
      _____ About once a month
      _____ A few times a year
      _____ I have created an account in a social-bookmarking site but do not
         maintain it
      _____ I don't use social bookmarking.

A collaboration suite is a site on the Internet where one can create or upload word processing documents, spreadsheets and presentations so that they can be accessed and edited from any computer with Internet connection. Furthermore, the user can invite fellow students, family or coworkers to also add to and edit the document.

23) Have you ever uploaded or created a document to a collaboration suite such as
Google Docs, Zoho or similar suite for easy collaborative editing from any
computer with Internet access?

＿＿＿＿ Yes  ＿＿＿＿No

24) How often do you use collaboration suites such as Google Docs or Zoho?

＿＿＿＿ Weekly
＿＿＿＿ About twice a month
＿＿＿＿ About once a month
＿＿＿＿ A few times a year
＿＿＿＿ I have only used a collaboration suite one time.
＿＿＿＿ I have never used a collaboration suite such as Google Docs or Zoho.

The following questions will ask you how often you use certain categories of Web 2.0
applications for the following reasons.

**For academic purposes, to gain knowledge or improve skills** – This includes
performing a task for the purpose of completing a class requirement, on one's own
initiative to learn or improve a skill, or to learn something new about our environment.

**To showcase one's skills, talents or knowledge** – This includes completing activities
such as a portfolio for the purpose of showing others that you are knowledgeable in a
subject matter or for showing off one's skills and talents.

When answering the next questions, put an "X" by the most appropriate answer.

25) How often do you upload photos to the Internet to a photo-sharing site such as Flickr
or Photobucket for academic purposes, to gain knowledge or improve skills?

＿＿＿＿ Always
＿＿＿＿ Often
＿＿＿＿ Sometimes
＿＿＿＿ Rarely
＿＿＿＿ Never

26) How often do you upload photos to the Internet to a photo-sharing site such as Flickr
or Photobucket to showcase your skills, talent or knowledge to a future employer or
someone else?

＿＿＿＿ Always
＿＿＿＿ Often
＿＿＿＿ Sometimes
＿＿＿＿ Rarely
＿＿＿＿ Never

27) How often have you created a podcast for academic purposes, to gain knowledge or improve one's skills?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

28) How often have you created a podcast to showcase your skills, talent or knowledge for a future employer or someone else?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

29) How often have you created and uploaded a video to a video-sharing site such as YouTube for academic purposes, to gain knowledge or improve one's skills?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

30) How often have you created and uploaded a video to a video-sharing site such as YouTube to showcase your skills, talent or knowledge for a future employer or someone else?
_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

31) How often do you post to your blog for academic purposes, to gain knowledge or improve one's skills such as writing?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

32) How often do you post to your blog to showcase your skills, talent or knowledge for a future employer or someone else?

     \_\_\_\_\_ Always
     \_\_\_\_\_ Often
     \_\_\_\_\_ Sometimes
     \_\_\_\_\_ Rarely
     \_\_\_\_\_ Never

33) How often do you create a new or update an existing Web page or Web site for academic purposes, to gain knowledge or improve one's skills?

     \_\_\_\_\_ Always
     \_\_\_\_\_ Often
     \_\_\_\_\_ Sometimes
     \_\_\_\_\_ Rarely
     \_\_\_\_\_ Never

34) How often do you create a new or update an existing Web page or Web site to showcase your skills, talent or knowledge for a future employer or someone else?

     \_\_\_\_\_ Always
     \_\_\_\_\_ Often
     \_\_\_\_\_ Sometimes
     \_\_\_\_\_ Rarely
     \_\_\_\_\_ Never

35) How often do you create or collaborate with others in a wiki for academic purposes, to gain knowledge or improve one's skills?

     \_\_\_\_\_ Always
     \_\_\_\_\_ Often
     \_\_\_\_\_ Sometimes
     \_\_\_\_\_ Rarely
     \_\_\_\_\_ Never

36) How often do you create or collaborate with others in a wiki site to showcase your skills, talent or knowledge for a future employer or someone else?

     \_\_\_\_\_ Always
     \_\_\_\_\_ Often
     \_\_\_\_\_ Sometimes
     \_\_\_\_\_ Rarely
     \_\_\_\_\_ Never

37) How often do you add Web sites or Internet resources to an online bookmark site and share resources with others for academic purposes, to gain knowledge or improve one's skills?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

38) How often do you add Web sites or Internet resources to an online bookmark site and share resources with others for the purpose of showcasing your skills, talent or knowledge to a future employer or someone else?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

39) How often do you collaborate with others in an online productivity software suite such as Google Docs, Zoho or Office Live Workspace for academic purposes, to gain knowledge or improve one's skills?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

40) How often do you collaborate with others in an online productivity software suite such as Google Docs, Zoho or Office Live Workspace for the purpose of showcasing your skills, talent or knowledge to a future employer or someone else?

_____ Always
_____ Often
_____ Sometimes
_____ Rarely
_____ Never

APPENDIX B

HUMAN SUBJECTS APPOVAL MEMORANDUM

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

118 College Drive #5147
Hattiesburg, MS 39406-0001
Tel: 601.266.6820
Fax: 601.266.5509
www.usm.edu/irb

**HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE**
**NOTICE OF COMMITTEE ACTION**

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **28073106**
PROJECT TITLE: **Journalism Students, Web 2.0 and the Digital Divide. A Uses and Gratification Approach**
PROPOSED PROJECT DATES: **09/01/08 to 05/31/09**
PROJECT TYPE: **Dissertation or Thesis**
PRINCIPAL INVESTIGATORS: **Mary E. Green**
COLLEGE/DIVISION: **College of Arts & Letters**
DEPARTMENT: **Mass Communication**
FUNDING AGENCY: **N/A**
HSPRC COMMITTEE ACTION: **Expedited Review Approval**
PERIOD OF APPROVAL: **08/28/08 to 08/27/09**

_Lawrence A. Hosman_        _8-28-08_

Lawrence A. Hosman, Ph.D.        Date
HSPRC Chair

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