A USES AND GRATIFICATIONS CASE STUDY OF TRINITY WATERS FACEBOOK PAGE FOLLOWERS

A Thesis

by

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ABSTRACT

Due to the advancement of the Internet, information delivery has been forever changed. Technology rapidly outpaces traditional methods of conveying educational material. As a result, educators must seek non-traditional methods to deliver information. The use of social media outlets such as Facebook is one avenue of information delivery. The purpose of this study was to determine the uses and gratifications of the followers of the Trinity Waters Facebook page. A qualitative research design and purposeful sampling of (n=9) respondents were employed in this study. A semi-structured interview protocol was utilized in order to direct the study's research objectives. Respondents' desire increased availability of information and greater opportunities to establish networks with contemporaries. In addition, respondents sought practical information that could be applied to their daily pursuits. This study showed that followers of the Trinity Waters Facebook page want a greater amount of educational information disseminated through the page. As a result of this study, Trinity Waters should continue to seek out and distribute information that is significant and specific to the Trinity River basin. Trinity Waters should continue to pursue and disseminate information on current legislative or political actions that are specific to the Trinity River basin and also the state and federal levels. Events, meetings or seminars pertaining to the Trinity River basin and conservation efforts should be actively promoted by Trinity Waters via the Facebook platform. This study should be replicated with other extension programs throughout the state and nation. Further research should

also be conducted on the implication of Facebook and social media in extension education settings.

DEDICATION

To my parents, David and Trena Hunt, and Lisa and Mark Thompson;

the best sister a girl could ask for, Jennifer Hunt (and Arrow, too);

and my grandparents- Bill and Betsy Hunt, and Bill and Dolores Connelly.

I could not have come to this point today without your unconditional love and support. You taught me that I can indeed do anything that I commit to. You have taught me what hard work, dedication, and even what blood, sweat, and tears are. Thank you for patiently listening to my complaints and understanding when I just did not have the time.

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NOMENCLATURE

EdgeRank	EdgeRank is a Facebook algorithm used to determine which stories appear in each user's newsfeed. EdgeRank uses three criterions to determine which stories appear in a news feed. Those criteria are affinity score, edge weight, and time decay. Affinity score is determined by how often you interact with that user or content. Edge weight is the type of interaction, with more effort to interact being worth more. Comments or shares are "worth" more than likes. Time decay describes a declining score as a news story ages.
Facebook	Founded in 2004, Facebook's mission is to make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them.
Facebook follower	Following people or organizations on Facebook will allow you to see their public updates in your news feed, keep up with journalists, celebrities, political figures, and other people you're interested in but with whom you aren't friends.
Facebook like	When a Facebook user clicks the "Like" button on a page, it means you are connecting to that page and the status updates of

	that particular organization will appear on your profile. In addition, content posted in Status Updates by the organization will appear on your News Feed.
Facebook news feed	The Facebook News Feed is a constantly updating list of stories from people and Pages that you follow on Facebook. News feed stories include status updates, photos, videos, links, app activity and likes.
Facebook page	Facebook Pages help businesses, organizations, and brands share their stories and connect with people. A Page is a Facebook profile for a business or organization rather than a person.
Social media	Virtual networks or communities where people or organizations may share or otherwise exchange information.
SNS	Social Network Site – an online environment in which a member may create a personal profile and connect with other members. SNSs are designed to combine individual profile pages with group interaction tools, such as chat, blogs, and discussion forums.
Trinity Waters	Trinity Waters is a non-profit organization that is dedicated to improving the quality of life, economic sustainability, and ecological integrity of area associated with the Trinity River Basin

	through a coalition of local communities, non-governmental organizations, and stewards of private and public lands.
Twitter	Twitter is a real-time information network that connects you to the latest stories, ideas, opinions, and news about what you find interesting; in 140 characters or less.
Web 2.0	Technology that allows users to interact with web content rather than simply viewing content. Content is dynamic rather than static.

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CHAPTER I

INTRODUCTION

Background

Social Media

The evolution of the Internet has forever changed the nature and delivery of information. Technology has outpaced traditional methods of conveying educational material (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). As a result, educators must seek non-traditional methods of delivering information (Waters, Burnett, Lamm & Lucas, 2009).

Since the emergence of social networking sites (SNSs), millions of new users have established their online presence, many of which visit the SNS on a daily basis (Valenzuela, Park, & Kee, 2009). However, Waters et al. (2009) concluded that simply creating an online profile or presence will not result in participation. Waters et al. determined that ―careful planning and research will greatly benefit nonprofits as they attempt to develop social networking relationships with their stakeholders" (2009, p. 102). While SNSs establish a virtual connection of existing relationships, they also allow users to establish new relationships with users of similar interests (Boyd & Ellison, 2007). This expanded view of connections allows SNS users to exponentially increase their available social and informational network (Valenzuela et al., 2009).

SNSs can be described as ―web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of

connections and those made by others within the system" (Boyd & Ellison, 2007, p. 211). One of the key features of SNSs is the transparency of connections. An individual cannot see a list of a colleague's connections in a face-to-face interaction; however, connections are easily discernible via SNSs. In addition, "a person's weak ties may increase because the technology is suited to maintaining these links cheaply and easily" (Valenzuela et al., 2009, p. 881). Bahner et al. (2012) found that, due to widespread adoption, social media is an excellent way to deliver educational content.

There are hundreds of SNSs currently available. Some of those sites are Facebook, Twitter, MySpace, LinkedIn, Friendster, and MeetUp. Facebook was created in 2004 in order to establish an online community for college students (Ellison, Steinfield, & Lampe, 2007). Within three years, the site garnered more than 21 million registered members, which subsequently resulted in 1.6 billion daily page views (Urista, Dong, & Day, 2009). While created to link university classmates, Facebook expanded to high school students in 2005, and then to businesses in 2007 (Ellison et al., 2007). Today, Facebook is utilized by businesses, governmental organizations, non-profits, and political parties and campaigns. Facebook is the most popular SNS with "more than a billion monthly active users as of December 2012" (Facebook, 2013).

Facebook is characterized by an individual's personal page in addition to pages for businesses, non-profits, celebrities, and events. Twitter is another popular SNS that is characterized by micro blogging. Each status update or Tweet is limited to 140 characters or less (Twitter.com, n.d.). Thackery, Neiger, Hanson, and McKenzie (2008) indicated that organizations garner better results through dynamic message exchanges

such as Facebook and Twitter than utilizing valuable resources to overhaul their current website. In addition to traditional skills, knowledge of and the effective use of social media is an essential skill for today‘s extension professionals (O'Neill, Zumwalt, & Bachman, 2011**)**. Due to the widespread adoption of this technology, extension educators should not underestimate the use of electronic technology by farmers (Guenthner & Swan, 2011). In addition, Guenthner and Swan found that farmers welcomed communication via Facebook and other electronic communication.

Trinity Waters

Trinity Waters began in 2000 as the Mid Trinity Basin Conservation Cooperative – a cooperative effort by 35 land owners that collectively controlled 150,000 acres. The cooperative was later formed into a non-profit organization, the Trinity Basin Conservation Foundation. Finally, the organization was renamed Trinity Waters in 2011.

> The purpose of the foundation is to improve the quality of life, economic sustainability and ecological integrity of areas associated with the Trinity River Basin through a broad-based coalition of local communities and municipalities, non-governmental organizations, and stewards of private and public lands, particularly local wildlife management cooperatives/associations. This coalition has expanded the current stakeholder base to include the Texas Wildlife Association, Texas AgriLife Extension Service, Texas A&M Institute of Renewable Natural Resources, Texas Water Resources Institute, Texas State Soil and Water Conservation Board, USDA Natural Resources Conservation Service, U.S. Army Corps of Engineers, Tarrant Regional Water District, Trinity River

> Authority, Ducks Unlimited, U.S. Fish and Wildlife Service, Delta Waterfowl, Holistic Resource Management of Texas, Houston Wilderness, private ecosystem-oriented business enterprises, and numerous other interested parties and entities along the entire river corridor. (Trinity Waters, n.d.)

The Trinity River basin is the most populated basin in Texas, serving over 5.5 million residents. The basin begins north of the Dallas-Ft. Worth metroplex and reaches south to the Galveston Bay Complex (Trinity Waters, n.d.). In addition, the ―Trinity River is 512 miles in length and its 1,983 miles of major tributaries drain an area of over 18,000 square miles and support primary water needs for over 40% of the state‘s population.” Figure 1 demonstrates the size and geographic location of the Trinity River basin within the state of Texas.

Figure 1

Map of the Trinity River basin. Map provided by Blake Alldredge of Trinity Waters. B. Alldredge, Personal Communication, 22 April 2013.

Statement of the Problem

Today‘s cooperative extension ~~is~~ at a crossroads as the mechanisms for learning and information dissemination in our society have been shifting from authoritative sources to people's social networks” (Diem, Hino, Martin, & Meisenbach, 2011, para. 1). By utilizing a current technology to deliver educational material, social media eliminates a learner‘s need to go out of his or her way to find content. The ease of material access through everyday technologies can greatly increase lifelong learning (Diem et al., 2011, Rogers, 2003). Amy Hays, Emerging Technologies Specialist at the Texas AgriLife Extension Service, stated that there is no reporting or central monitoring of Facebook pages pertaining to Texas agriculture extension (A. Hays, personal communication, 1

May 2013). Hays elaborated that while some counties have multiple pages for different types of programs, some other counties have none (A. Hays, personal communication, 1 May 2013).

Considerable research has been presented on best social media practices for businesses, non-government organizations, and political parties; however, very little has been concluded in regards to the utilization of social media in educational settings. Most empirical research on social media in education relates to student-instructor interactions and attitudes, and the use of Facebook in formal educational settings. This case study utilized followers of the Trinity Waters Facebook page to determine their motivations for following the page, knowledge gained from the page, and any suggested improvements.

Waters et al. (2009) discovered that solely establishing a SNS profile will not elicit participation or awareness. In order to reap benefits from social media websites, organizations must carefully research and plan their delivery of information. This note is augmented by Rader's (2011) study in which the availability of extension information was evaluated. Rader (2011) discovered that:

> in April 2010, _how to garden' was searched more than five times as frequently as _extension service.' Overall, searches for _extension service' have declined by more than 50% from 2004 to 2010. Now more than ever, Extension needs to focus on searchable content rather than on _Extension.' (n.p.)

As a conservation organization and agricultural extension program, Trinity Waters seeks to educate as many people as possible on their influence within the basin.

By engaging and educating landowners about water conservation and wildlife habitat management practices, the basin will ~~b~~benefit from reduced run-off and sedimentation loss, while increasing infiltration to groundwater and water holding capacity on private lands" (Texas A&M AgriLife Extension, 2013, p. 1).

Purpose of Study

Informal education methods have changed greatly in recent years. Traditional face-to-face seminars and workshops have been replaced by Google and other electronic mediums. This study sought to evaluate the uses and gratifications of Trinity Waters Facebook page followers. This study will help determine best practices for Facebook use by the Trinity Waters program.

Research Objectives

This study sought to answer the following questions:

1. Describe motivations for visiting the Trinity Waters Facebook page;
2. Describe what was learned from or received from the Trinity Waters Facebook page;
3. Describe how recipients have applied information that was learned from the Trinity Waters page; and
4. Describe user-desired enhancements of the Trinity Waters page.

Significance of Study

Agriculture extension programs suffer from increasing populations and declining budgets (Anderson & Feder, 2004). Warner and Christenson (1984) noted that agricultural extension not only played an essential role in improving agricultural

practices and production, but also stressed the utilization of family resources, personal development, improved quality of life, and the improvement of the total community (Warner & Christenson, 1984). Warner and Christenson (1984) also questioned if "an organization conceived in 1914 as a way to get farmers to adopt improved agricultural practices continue to be relevant when it celebrates its 100th birthday?" (p. 125). Extension agents simply cannot reach the same percentage of the population as they did in the past. Gone are the days of mailing information pamphlets to an inquiring farmer (Peters & Franz, 2012).

A May 2011 Texas AgriLife Extension customer satisfaction survey of 19,228 respondents found that 79% of respondents were Caucasian, 13% Hispanic and 5% were African-American (Cummings, 2012). The largest age group was 45 to 64 years of age with 50% of respondents, followed by over 65 years with 27 of respondents, and finally under 45 years of age with 23% of respondents (Cummings, 2012). Based on this survey, the typical user of the Texas agriculture extension programs could be described as at least 45 years of age, white or non-Hispanic, having at least a high school education, and residing on a farm/ranch or rural area (Cummings, 2012). These surveys were issued at the conclusion of face-to-face educational events which must be considered when evaluating the reported customer satisfaction. The average content satisfaction score was 4.63 of a maximum 5.0, while 99% would recommend the attended event to others, and the average score for the perceived value of information received was 4.44 out of a possible 5.0 (Cummings, 2012).

In order to reach ever growing populations, extension agents must embrace new technologies and resources (Diem et al., 2011). One such resource is Facebook. By evaluating the uses and gratifications of the Trinity Waters Facebook page followers, extension agents may better understand what information and resources their constituents are seeking. Once parameters are determined for the Trinity Waters page, this case study may be replicated in other extension programs in an effort to create best management practices for other agents across the state, nation, and world.

In conversation with Dr. James Cathey, Education and Outreach committee leader for Trinity Waters, he commented that ―the reason that this [Facebook page] is so important, is that we've had a difficult time getting people in seats" (J. Cathey, personal communication, 22 April 2013). Dr. Cathey noted that Trinity Waters needs to significantly expand its reach, and hosting occasional seminars which garner 20 to 30 attendees is not going to accomplish that goal. Trinity Waters is utilizing Facebook among other technologies such as ScoopIt and Tumblr in order to reach a larger number of people.

Advantages of using Facebook and other social media outlets are abundant. Most social media technology is readily available and free of charge. In addition, the general public has enthusiastically adopted outlets such as Twitter, Facebook, LinkedIn, and ScoopIt. Due to ―the fact that Internet usage is not limited by income, education, or geography" it is an ideal medium to disseminate information (Lohse, 2013, p. 69). Lohse (2013) found that using Facebook advertising to recruit nutritional education participants to be highly effective, and also allowed for highly specific demographic targeting. By

tapping into existing technologies such as SNS, extension agents may increase effective reach by pushing content to outlets that the public is already using.

In addition to the ease of transferring information, social media applets make redistribution of information essentially effortless. Friend-networking sites such as Facebook will expedite the diffusion of extension information by rapidly decreasing the time of communication between members of the social network. This expedited communication network, in addition to the distribution of information from trusted peers (Facebook friends), will greatly increase the likelihood of innovation adoption (Ellison et al., 2007, Rogers, 2003). While a member of Facebook may never seek out the Trinity Waters Facebook page, if the page is shared through a common friend, their peers will be much more inclined to view and subsequently follow the page (Rogers, 2003).

CHAPTER II

LITERATURE REVIEW

Theoretical Framework

Katz, Blumler, and Gurevitch's (1974) uses and gratifications (U&G) theory was employed in this study. The uses and gratifications model states that a social media user's media outlet preferences ~~are~~ are affected by social, psychological, and environmental needs, along with their need to communicate" (Rhoades, Friedel, & Irani, 2008a, p. 33). Users of media outlets are active consumers that are aware of their needs. Users select the media that is perceived to be the most likely to fulfill their needs (Katz et al., 1974). The use of media may fulfill many types of perceived needs, such as cognitive or informational needs, affective or emotional needs, alternative reality or escape needs, and also integrative needs (Katz et al., 1974).

Uses and gratifications theory evaluates a consumer's propensity to return to a successful information source; the learner is motivated to return if their desired need was gratified by a previous visit to the site or media outlet. Employing the U&G method allows researchers to study media user's motivations for using certain types of media, allows for the study of media interaction behaviors, effects, and perceptions (Katz, Gurevitch, & Haas, 1973). Xu, Ryan, Prybutok and Wen (2012) found that SNS users are employing social media for utilitarian purposes more than ever before. In addition, Xu et al. (2012) found that users noted immediate access to information and coordination efforts were primary interests of SNS users.

A diffusion model was not appropriate for this study, as the subjects in the study have already adopted social media as an innovation. The U&G theory weighed the auxiliary uses that Facebook members employ. Uses and gratification theory has flaws as well. Uses and gratification theory focuses on audience consumption and as a result is often too individualistic (Elliot, 1974). Additional flaws include biased self-reporting and lack of universal terms for U&G concepts (Ruggiero, 2000).

Uses and gratification theory must be revisited when considering Internet usage. Individuals utilize the Internet for various reasons, including social interaction, business communications, education or information, news, games and other recreational purposes. Even through the highly impersonal Internet, interpersonal relationships are reemerging as a U&G variable (Ruggiero, 2000).

Rhoades, Friedel, and Irani (2008a) utilized U&G theory in an evaluation of Web 2.0 technology in classrooms. Uses and gratifications theory does not explore the effectiveness of new technologies; however, it does address the perceived needs and resultant gratifications that are received from the technology. A media user is likely to return to a source that previously gratified their needs (Rhoades et al., 2008a). In addition, the authors found that it is imperative that educators present information sources that gratify students‘ needs. If educators do not use a gratifying medium, students are less likely to return to that medium in the future.

Guo et al. (2010) found a lack of research on preferred computer-mediated communication (CMC) in higher education. This study found seven dimensions to usage of CMC: ~~–in~~formation seeking, convenience, connectivity, problem solving, content

management, social presence, and context cues" (Guo et al., p. 361). Convenience was cited as the primary reason for student use of CMCs. By understanding the uses and gratifications sought by end users (the students), educators may more effectively deliver course material.

Cheung et al., (2011) investigated the uses and gratifications for users of Facebook. Cheung et al. sought to determine why students chose Facebook over other SNSs. The authors found that social presence was the primary reason for selection of Facebook. Facebook allows users to recognize similarities among their peers and build relationships. SNSs, unlike many other Web 2.0 technologies, are dependent on interaction amongst the members. Interaction amongst peers is particularly useful for collaborative learning that may empower e-learning (Cheung et al., 2011).

While most U&G research focused on SNS as a whole, Smock, Ellison, Lampe, and Wohn (2011) studied U&G of specific features of Facebook. Smock et al. proposed that Facebook be viewed ~~–as~~ a collection of tools utilized in different ways to meet different needs" rather than one homogenous tool (p. 2323). Smock et al. (2011) determined that three motivations predict general use of Facebook – entertainment, information sharing, and social interaction. However, there are six motivations that forecast the usage of specific Facebook features. Expressive information sharing was found to be a motivator that resulted in the posting of status updates. In addition, commenting on statuses was motivated by those seeking relaxing entertainment, companionship, and social interaction. Writing on friends' Facebook walls was determined to be motivated by those seeking habitual pastime, professional

advancement, and social interactions. Professional advancement and social interaction were the top motivations for those that utilized the Facebook private message feature. Similarly, social interaction was the sole motivation for those using the Facebook chat feature (Smock et al., 2011). By evaluating individual Facebook features rather than the platform as a whole, researchers may begin to determine why Facebook users exploit certain features, and what they intend to accomplish by using that specific feature (Smock et al., 2011).

Social Networking Sites

While there is no requirement of an existing relationship in order to establish a Facebook friendship, Raacke and Bonds-Raacke (2008) found that the top five reasons college students use Facebook are "to keep in touch with old friends," "to keep in touch with current friends," "to post/look at pictures," "to make new friends," and "to locate old friends." Once a relationship has been established, members can post information on each other's "wall," tag friends in status updates, and share photos and videos instantaneously. This instantaneous sharing of information can be very valuable while also very detrimental tool to a business or organization, as a person's reported experiences are broadcast to their trusted friends.

Facebook Groups allow members of similar interests to "congregate" online and be apprised of current events. Park, Kee, and Valenzuela (2009) found that "users who seek information are more likely to participate in civic activities" (p. 732). Members of Facebook groups can also post content on the group wall, which is available for all group members to view. Similarly, businesses may create a profile page that resembles a

personal page; however, it broadcasts information pertaining to the business. Once a Facebook user has connected with a business profile or become a member of a group, they will be apprised of any status updates.

> Wang, Tchernev, and Solloway (2012) concluded that:
>
> Ungratified social and habitual needs of social media (SM) use can accumulate through their own endogenous effects over time, and motivate future SM use. In other words, these needs drive SM use, but are not gratified by SM use, and grow larger to stimulate heavier SM use in the future. In this sense, SM use gradually cultivates greater social and habitual needs to use SM. This may help explain the increasing popularity of SM (p. 1837-1839).

Social Networking Sites in Formal Education

DiVall and Kirwin (2012) found that Facebook implementation in a college class was well received by students and substantially increased their self-perceived likelihood of being exposed to course announcements, online discussions, and external links in a study of pharmaceutical students. Bosch (2009) found that since learners were already visiting SNSs on a frequent basis, being able to check educational or class-related posts at the same time was useful. In addition, students were able to utilize their friend network in order to locate course-related material on the Internet, answer questions pertaining to the course, and connect with fellow students that they would not usually interact with in person (Bosch, 2009). The use of social media also allows students to

connect with mentors or tutors instantly at any time of the day, outside of class and in a much more relaxed environment (Bosch, 2009).

Mazman and Usluel (2010) found that while traditional Learning Management Systems (LMS) allow learners to access educational content from a distance and at any time, many fail to promote or even provide ability for social interaction amongst peers. Today‘s learners demand personalized content and social connectivity, which would suggest that social media is an excellent medium for transmitting educational content (Mazman & Usluel, 2010).

Mazman and Usluel (2010) further postulated that allowing learners to ―re-situate learning in an open-ended social context by providing opportunities for moving beyond the mere access to the content (learning about) to the social application of knowledge in a constant process of re-orientation" (p. 445). Mazman and Usluel (2010) concluded that usefulness was the primary determinant of Facebook usage for educational content. Rogers (2003) defined ―usefulness" as the ―relative advantage" – or if the innovation has value – to that person.

Roberts, Murphy, and Edgar (2010) evaluated the social networks and interactions among student teachers. In this study, student teachers used face-to-face and telephone communication far more often than Facebook or MySpace (Roberts et al., 2010). As a group, the student teachers did not interact to a large degree. Roberts et al. surmised that technologies such as Facebook and MySpace were not utilized due to their unavailability on the secondary campus.

Rhoades, Irani, Telg, and Myers (2008b) surmised ~~–it~~ is important that we monitor students' attitudes and usage to ensure curriculum is developed to meet the needs of this technology-rich generation" (p. 109). In addition, Rhoades et al. (2008b) recognized the need for students to be able to recognize credible sources and appropriate technologies. Additionally, Rhoades et al. (2008b) found that more than 85% of students in the study had a Facebook account. Resultant recommendations of this study included that due to the ubiquitous nature of Facebook and MySpace, they could offer new teaching mediums for educators. Subsequently "[b]ecause many students are familiar with these programs and the technology involved, instructors can utilize the communication tools in these programs to engage students in a manner comfortable and enjoyable to them" (Rhoades et al., 2008b, p .114).

Aydin (2012) found that ~~–t~~he educational benefits of social networking also focus on specific areas such as social learning, e-learning, environmental learning, business, art, and chemistry education" (p. 1098). Ganis (2009) cautioned that creating an educational SNS platform would require heavy involvement not only from educators and students, but also SNS experts, psychologists, sociologists, and information technology specialists.

The University of Florida experimented with the usage of Facebook Groups as an alternative to Course Management Software (CMS) (Loving & Ochoa, 2010). In addition to the ubiquitous nature of Facebook, the ability to send messages through Facebook and know that students have received and read the message was noted as a great advantage to Facebook over traditional CMS (Loving & Ochoa, 2010). Loving and

Ochoa (2010) also noted that ~~an~~ an advantage was that Facebook groups are easy to use and can be easily created by anyone with even the most cursory understanding of Facebook or other similar online environments" (p. 127). One drawback to the use of Facebook is that all class members must have a Facebook account, or be willing to create one (Loving & Ochoa, 2010). Loving and Ochoa found that while Facebook has many features of a CMS, it lacks features for grading, evaluations/testing, and uploading documents. However, Facebook was preferable in that live chat, discussions, and classroom interactivity were heightened through its usage (Loving & Ochoa, 2009).

In a 2010 study by Isacsson and Gretzel, Facebook Groups was utilized as a means for sharing data and communicating about course projects for a study abroad program. Students were instructed to research sustainability issues and subsequently post them on the group page. In addition, students were assigned into groups which represented countries to be researched (Isacsson & Gretzel, 2010). Upon reflecting on the use of Facebook for the course, one student commented:

> I think you are more apt to respond as everyone sees it and because there is a picture as supposed to just sending e-mails. There is a more personal touch to it which encourages you to be more active. It was exciting to go to the pages and see tons of postings, not just scholarly articles, but also newspaper articles and YouTube videos" (Isacsson & Gretzel, 2010, p. 86).

The authors concluded that while Facebook was an excellent way to disseminate information, Facebook was not ideal for soliciting true collaboration between the students.

Siegle (2011) determined that most students wish to keep their social and academic lives separate. However, Siegle (2011) also found that if students needed to use LMS tools that were available on Facebook, they preferred to use Facebook over the LMS. Many professors found that using Facebook in lieu of LMS "broke down barriers between themselves and their students" and encouraged students to be active rather than passive learners (Siegle, 2011, p. 17; Everson, Gundlach & Miller, in press). Because Facebook incorporates many of the same features as common LMS such as Blackboard or Moodle, it should be included when considering online learning opportunities (Everson et al., in press). Everson et al. (in press) provided a list of best practices in using SNSs in formal educational environments. The suggested practices are: "give clear explanations about why and how the tool is to be used, let the students take the lead in creating the social media space and how to use it so that it becomes their own [space], and adapt your use of social media to how the students will get the most benefits based on what you learn from observing the students' habits" (p. 11).

Social Networking Sites in Marketing and Public Relations

Kietzmann et al. (2011) also noted that marketing and public relations have largely been removed from a business's control as social media has taken the forefront. Although many businesses recognize the potential impact of social media, few have created a social media presence for their organization, largely due to unfamiliarity with Facebook and social media (Kietzmann et al., 2011). Laroche, Habibi, Richard and Sankaranarayanan (2012) conducted an empirical study of 441respondents and concluded that:

> Brand communities established on social media have positive effects on community markers (i.e., shared consciousness, shared rituals and traditions, and obligations to society), which have positive effects on value creation practices (i.e., social networking, community engagement, impressions management, and brand use). Such communities could enhance brand loyalty through brand use and impression management practices (p. 1755).

Brand loyalty could be utilized by extension professionals as a mode of promoting their mission. Those following the agricultural extension could form a cohort similar to those following a specific product brand. Laroche et al. (2012) concluded that ―brand communities established on social media enhance feelings of community among members and contribute to creating value for both members and the company" (p. 1763).

Waters et al. (2009) studied the engagement of stakeholders though social networking in 275 randomly sampled legally incorporated non-profits. From the study, Waters et al. (2009) concluded that ―nonprofit organizations recognized the rapid expansion of the social networking phenomenon, and they wanted to be on Facebook. However, they were not taking advantage of all the options the site had to offer their relationship cultivation efforts" (p. 105). Each of the 275 pages was evaluated for disclosure information, dissemination of information, and involvement. Disclosure information included:

> A description of the organization's programs and services, an organizational history, the mission statement, the organization's Web site, the logo, and a listing of the administrators of the profile. Information dissemination was evaluated by

> determining whether links to news items, photographs, video and audio files, posted announcements, and links to press releases and campaign summaries were posted. Providing methods to contact, donate, and volunteer for the organization were examples of the items used to measure involvement along with the use of message boards, provision of an organizational calendar of events, and the presence of an e-commerce store." (Waters et al., 2009, p. 103).

Of the evaluated features, most pages were found to lack information dissemination and involvement (Waters et al., 2009).

Haigh, Brubaker and Whiteside (2012) conducted a content-analysis of for-profit business Facebook pages and determined that most business primarily advertise their products or services, achievements, and awards on their pages. In addition, Haigh et al. (2013) found that ―interacting with Facebook pages bolsters stakeholders' perceptions of the organization-public relationship, corporate social responsibility (CSR), and purchase intent. CSR can be defined as a ―central relationship-building activity', or ‗scaffolding for mutually beneficial exchanges between an organization and its publics"' (Haigh et al., 2013, p. 54-55). The organization employing a CSR communication strategy had the most success bolstering these variables" (p. 52). As a result of this study, organizations should make a concerted effort to employ the CSR communication strategy when delivering content via Facebook. (Haigh et al., 2013). Haigh et al. (2013) concluded that CSR creates more positive perceptions of an organization than corporate ability information, but is less likely to be utilized by organizations.

Brand management and product marketing have taken to social media as well. Reyneke, Pitt, and Berthon (2012) cautioned that ignoring SNS could lead to the peril of a brand. The authors suggest using third-party sites such as howsociable.com in order to determine a brand's collective SNS visibility. Howsociable.com collectively monitors 36 SNSs in order to calculate a score ranging from 0 to 10 (Reyneke et al., 2012). People use SNSs to interact with other people, not businesses (Piskorski, 2011). When businesses use SNSs to connect with people, they must do so strategically. Piskorski (2011) found that many businesses simply transfer their digital strategy – broadcasting their message to customers in order to get feedback – instead of making a social connection with their followers. Piskorski (2011) concluded that "successful social strategies (1) reduce costs or increase customers' willingness to pay (2) by helping people establish or strengthen relationships (3) if they do free work on a company's behalf" (p. 118). Successful social media marketing focuses on customers' unmet needs. My assisting clients attend to their unmet social needs and subsequently linking those to business objectives, they are more active within the social strategy (Piskorski, 2011).

Social Networking Sites and Extension Education

Diem et al. (2011) established an assessment team in order to determine if the cooperative extension was ready to adopt new technologies in order to reach new audiences. Recognizing this trend is vital to the future of the cooperative extension. Diem et al. (2011) also discovered that current extension programs have failed to meet the needs of today's constituency, which expects to find comprehensive information online. In addition, these same constituents are not willing to gain the information from

more traditional face-to-face interactions. As a result the cooperative extension is losing its audience.

Key findings of Diem et al.'s 2011 study included "that a majority of faculty/staff really only know their currently served audiences and that local Extension programs have often sacrificed new audiences by catering to the 'high-maintenance needs' of traditional clients… and most importantly '[f]aculty/staff don't know what they don't know. In particular, they don't know what technology can or can't do'" (p. 12). Historically, the cooperative extension has "been a leader in adopting new tools and practices;" however, they have failed to embrace new information dissemination technologies (Diem et al., 2011, p. 15). Guenthner and Swan's (2011) study of Idaho university students and potato farmers found that farmers were more accepting of technology than students. Currently, "[p]eople who use electronic technology for business, communication, or entertainment may prefer to use it for learning as well" (Guenthner & Swan, 2011, p. 3).

Strong and Alvis (2011) conducted a quantitative content analysis of a State Master Gardner Facebook page. Considering the vast amount of time that adults spend on Facebook and other SNSs, extension educators may capitalize on this dissemination method at a relatively low cost. Each disseminated lesson was categorized and evaluated on learner interactions. Strong and Alvis (2011) concluded that the State Master Gardner Facebook page could be strengthened by including all of Gagné's (1985) nine conditions of learning in each disseminated lesson.

Rader (2011) noted that:

> Extension could use the army of Master Gardener volunteers its educated (17,269 between in 1998 and 1999, according to McAleer, 2005) to build high-quality, current, research-based, gardening content for the Internet" in order to create quality content for its websites (para. 9).

While Trinity Waters does not have an army of trained volunteers, highly active and knowledgeable followers could be tapped in order to produce content for the Trinity Waters page. In addition, Rader (2011) made ten suggestions for increasing extension's presence on the Internet:

1. Structure public websites based on stakeholder needs, not on the organizational structure of Extension itself.
2. Develop internal websites for Extension staff and faculty.
3. Collaborate statewide on websites to limit inter-county competition.
4. Fund development and maintenance of websites.
5. Hire new Extension faculty and staff with expertise in Web-based media and technology.
6. Make Google Analytics available to faculty and staff so they can document their own impact on the Internet.
7. Encourage staff, faculty, and volunteers to write fewer articles, and ones of higher quality, that reflect current interests of clients. Use Google Trends to identify what clients are looking for.

8. Write content for the Web in Web-style, not print-style. Include more color photos and bullet points, and use a Web-style guide such as: http://www.webstyleguide.com
9. Strategically use key words, links to other sites, and content to improve rank in Google Search.
10. Help users find relevant and important information within Extension sites by design and by improving search functions. (para. 12)

Rader underscored the need for web-presence by noting that ―in order for Extension to remain relevant to an online public, it should allocate people, time, and money to developing and maintaining Internet content. The public needs and wants relevant, unbiased, research-based information online" (para. 14).

Telg, Irani, and Varvorines (2008) concluded that ―the success of an Extension program not only includes communicating interesting and relevant content, but also relies on communicating with the public in a way that creates awareness, stimulates interest, and, in the end, engages involvement by targeted clientele" (p. 1). Telg et al. (2008) found that Florida extension professionals were using word of mouth as their primary marketing source for current users of extension programs, and press or news releases for informing the general public. The use of social media could merge these two methods quickly and efficiently. Press releases could also point interested parties to the program's SNS in order to propagate extension information and activities.

Thackery et al., (2012) conducted a study of state health departments (SHDs) which are utilizing social media as a method of communicating with public health

audiences. Of 17 evaluated SHD Facebook pages, only one had a high engagement rate of 73% per post, while the average engagement was 10.4%. The engagement rate was calculated by summing the number of likes and comments, and then dividing by the number of page fans. Thackery et al. (2012) concluded that ~~"t~~he most common purpose was a one-way sharing of public information" (p. 247). Educational agencies simply:

> Cannot assume that because they post content on a social media application that people will respond. It is important to communicate information in a way that reflects the audience preferences, stimulates response or discussion, and is tailored to the social media application. (Thackery & Williams, 2012, p. 248).

In addition to Thackery et al.'s conclusions, Waters and Williams (2011) found that ~~"a~~dvocacy organizations rarely use social networking sites or blogs to create dialogue; instead, their primary focus is information sharing" (p. 354).

Thackery and Williams (2011) suggested using a two-way asymmetrical communication model to solicit feedback from social media followers. While this type of questioning is usually utilized in interviews and focus groups, ~~"t~~he organization could also ask for other forms of involvement so that they can learn about their stakeholders through direct involvement, and it may be represented quite simply through an update asking for feedback on a particular topic" (Thackery & Williams, 2011, p. 356). The primary means of interacting with the audience should reflect a two-way symmetrical communication model (Thackery & Williams, 2011). The two-way symmetrical method ~~"p~~romotes a balanced dialogue between an organization and its publics to encourage an open, mutually beneficial relationship…this model represents legitimate conversations

between an organization and its followers, attempts to resolve conflict, and various forms of recognizing others publicly" (Thackery & Williams, 2011, p. 356).

CHAPTER III

METHODS

Research Design

This study implemented a qualitative research design (Dooley, 2007; Merriam, 2009). This was a case study of nine *(n*=9*)* followers of the Trinity Waters Facebook page. A case study was the most appropriate choice for this study as the desired data was personal opinions of the participants. Numerous evaluations of Facebook and social media have previously employed the case study (LaRue, 2012; Mazman, & Usluel, 2010; Sheldon, Abad, & Hinsch, 2011).

Population

The participants were purposefully sampled, as Lincoln and Guba (1985) found that purposive sampling augmented the meaning of obtained data. The sample was comprised of Facebook page followers that responded to a solicitation for interviews via the Trinity Waters Facebook page or were selected due to their involvement or activity with the Trinity Waters Facebook page. Blake Alldredge, administrator of the page, selected known active Facebook page users.

Personal interviews were conducted with each respondent via telephone or email. The data collected was audio recorded and subsequently transcribed. Interviews elicited responses pertaining to the information sought from the Facebook page; information actually obtained, and suggested improvements to the page.

Trustworthiness

Triangulation and member checks assisted in the establishment of trustworthiness (Dooley, 2007). Trustworthiness relates to the extent in which the study findings accurately depict the respondents and their attitudes (Dooley, 2007). Williams and Morrow (2009) identified three key elements to trustworthiness of qualitative data: integrity, balance between meaning and interpretation, and clear communication of findings.

Integrity of the data may be established by clearly detailing each aspect of data collection. In addition, triangulation, data checks, and data redundancy also bolster integrity (Williams & Morrow, 2009). Ensuring balance between meanings and interpretation may be achieved by awareness of data collector biases and keeping a detailed journal (Denzin & Lincoln, 2008). In addition, member checking in order to confirm that researcher interpretations align with participant meanings are an accountability tool (Denzin & Lincoln, 2008). A constant comparative method was employed in the analysis of data. This method allowed themes to emerge from the respondent data (Glaser, 2002).

This study is strictly limited in applicability to the nine respondents from the Trinity Waters Facebook page. This particular study may also be critiqued for researcher bias and faulty data interpretation and categorization, as the data were collected from personal interviews and subsequently transcribed. The use of email to contact potential participants and conduct interviews was not a limitation of this study as a valid email

account is required in order to establish a Facebook account. The lack of an email account would also exclude a respondent from the population.

Data Collection

Personal interviews were conducted using four pre-formed, open-ended questions. Expert opinion was solicited regarding suitability of the research questions which were modified as necessary to reflect suggested improvements. Each interview was loosely structured with a definitive question set, allowing for subsequent inquiry into each response.

Volunteers were solicited by using the Trinity Waters Facebook page wall feature. The topic of the interview was not disclosed on the Facebook wall in order to avoid respondent bias. Respondents were also purposefully sampled from a total population of 244 (N=244) Facebook page Followers, with the assistance of Blake Alldredge. These respondents were contacted due to their activity within Trinity Waters or above average activity on the Trinity Waters Facebook page. Once respondents agreed to participate, they were given the option to participate in a telephone or email correspondence interview.

Nine followers agreed to participate in the interview process. Telephone interviews were audio recorded in order to accurately transcribe the data. Email correspondence interviews were transferred to a Microsoft Word document for ease of data manipulation and to disassociate responses with the respondent‘s name.

Data Analysis

Each interview was transcribed to text and was subsequently numbered one through nine (Respondent1 [R1] – Respondent9 [R9]). Each response to the first research question was compiled in one document in order to evaluate each response for recurring or emergent themes. The same method was used for evaluation of the second, third, and fourth research questions. This allowed the data to be continually and systematically evaluated.

Once all responses were compiled into the appropriate document, each response was evaluated for content using the constant comparative method. The constant comparative method facilitated the formation of hypotheses rather than the testing of pre-formed hypothesis (Glaser, 1965). Each response was evaluated for themes and was subsequently coded. As more themes emerged and were assigned codes, each was re-evaluated against those in the same category. After each response was coded and subsequently compared against other responses in the same category, coding ceased and initial ideas and concepts regarding the data were recorded in a journal. Each code category was compared against the others and then grouped appropriately. Theme categories were arranged for each research question addressed and theory was developed.

Responses were analyzed for emergent themes, ideas, and concepts. This method was repeated for each of the research questions until data saturation occurred. The themes were entered into a spreadsheet in order to record each theme and the frequency in which they occurred. Triangulation was used —.. .among different data sources to

enhance the accuracy of the study" (Creswell, 2008, p. 266). By compiling responses to each objective, the responses were able to be compared efficiently for recurrent themes.

CHAPTER IV

FINDINGS

The purpose of this study was to evaluate one innovative educational tool: Facebook. In addition to traditional skills, knowledge of and the effective use of social media is an essential skill for today‘s extension professionals (O'Neill et al., 2011**)**. This study helped determine best practices for Facebook use by the Trinity Waters program and, potentially, other similar-objective programs.

Findings

Objective One

The respondents were easily categorized as Trinity Waters stakeholders, those seeking to network with others of similar interests, and those seeking information about water and conservation issues. Respondents primarily followed the Facebook page in order to network with others (n=5) or gain information about water and environmental conservation (n=5). Many respondents had multiple motivations for following the page as depicted in Table 1

Table 1

Research objective 1: Describe motivations or reasons for visiting the Trinity Waters Facebook page

Theme*	Respondents									
	R1	R2	R3	R4	R5	R6	R7	R8	R9	Totals
Stakeholder	1	1					1			3
Information conservation issues		1	1		1	1	1			5
Facebook is easier than visiting a website		1						1		2
Keep up with political issues			1						1	2
Networking with others	1	1		1		1	1			5
Find current events & goings on							1		1	2

***Note: some interviews may have presented more than one theme.**

Networking with Others

Networking with others was mentioned as a motivation by five of the respondents (R1, R2, R4, R6, R7). R6 said "I look for the opportunity to connect with other wildlife conservation professionals through the Facebook networking connections." R1 noted that "Facebook allows a lot of people and organizations to keep up with each other, without having to directly reach out to each individual." R2 also added:

> [H]aving all the Trinity River basin organizations cooperating on getting information out there is key. We're all working towards the same end goal. It is important for them to be able to easily transfer information and social media seems to fill that void.

R4 mentioned that "when I go there, I always look for others who are posting. When I see someone that I know (or would like to know) – I try to hook up with them". R7

stated, ―I work for the Trinity Trust Foundation, a partner organization of Trinity Waters, and I attempt to keep up-to-date with their work and cooperate with their efforts."

Gain Information

Five respondents reported that gaining information was their motivation of using the page (R2, R3, R5, R6, R7). R2 commented that they ―watch the Trinity Waters page to monitor what is going on with the program and how it is carried out." R3 added:

> ―Liked" pages show up in the home page feed and Trinity Waters regularly posts articles of interest to both ranchers and tree farmers. The issues pertaining to range management and water quality are pretty much the same for tree farms. Political interests are also similar, though Trinity Waters' page refrains from outright political influence as does Schwausch Tree Farm's page. Since Trinity Waters regularly posts issues relevant to tree farming they are probably the one organization we most frequently share posts from.

Similarly, R5 remarked that ―I like to gather any information I can on subjects that affect the Trinity River Basin and landowners like us that are stewards to the area." R6 added ―I enjoy watching for the Trinity Waters page updates in my newsfeed to keep on top of important wildlife and habitat issues that are affecting the state of Texas and specifically the Trinity watershed." R7 stated:

> My motivation for ‗Liking' and visiting the Trinity Waters Facebook page is twofold. First, I have a personal interest in agriculture, land management, and conservation. The Trinity Waters organization focuses on water management as

it relates to all three of these subjects. I like to keep _in the know' with current events and information regarding water management and frequently refer to the Trinity Waters Facebook page, as well as their website.

Objective Two

The first and second research objectives—describing the motivations for following the page and describing what was learned from or received from the page—were closely paired. In the second objective, five respondents reported following the page in order to stay abreast with current events and seminars that were being offered or advertised by Trinity Waters. Four reported following the page in order to glean information for further dissemination to newsletters, blogs, and classes. A complete distribution of responses in depicted in Table 2.

Table 2

Research objective 2: Describe what was learned from or received from the Trinity Waters Facebook page

Theme*	Respondents									
	R1	R2	R3	R4	R5	R6	R7	R8	R9	Totals
Knowledge of upcoming events/seminars	1	1			1	1	1			5
Content for dissemination (newsletters, etc.)		1	1	1				1		4
Feral hog control, applied water management, conservation practices					1		1			2
Importance of watershed protection						1			1	2
Use as a model for organizational structure							1			1

***Note: some interviews may have presented more than one theme.**

Objective Three

The third research objective on this study was to describe how Trinity Waters followers applied information that was received from the page. The majority of the respondents (*n*=6) reported further dissemination of Trinity Waters information to other educational settings (R2, R3, R4, R6, R8, R9).

Personal Application of Information

In addition to utilizing information gained, respondent 4 also applied information gained from the Trinity Waters page on their property:

> I have applied many things… the wild game cooking stuff, the game bird information and how to create habitat for them, information on wild hogs – trapping and hunting and such, the white-tailed deer information, food crops for game animals, erosion control, planting grasses for the health of the land – and how best to retain water on our lands. I also enjoy the knowledge (and remembering) that I am one piece of the puzzle – that there is a big water basin that I am a part of. Knowing that I am one piece of the puzzle changes my perspective on things.

Respondent 3 added that ~~–o~~ccasionally Trinity Waters posts something we haven't tried…and at home we discuss the practicality of practicing these ideas on our farm." Similarly, respondent 8 added ~~–y~~es, we follow and have tried a lot of the feral hog management topics". Respondent 7 has also employed habitat management practices from the page- ~~–e~~rosion control is a big factor for us, we try to do what we can and if we find something new that may work, we always consider it".

Dissemination of Information to Others

R8 included that, ~~–a~~s an educator that works with students in the Houston region – the Trinity watershed that feeds into the Houston metro area‘s water supply is an important factor that I bring into every classroom that I go into”. R3 also noted that ~~–o~~ccasionally Trinity Waters posts something we haven't tried and even if we don't try it, we pass it along and at home, discuss the practicality of practicing these ideas on our farm”. R2 ~~—h~~[as] used content in newsletters, etc.” and R5 remarked that they ~~–tr~~y to share the information with other land owners that are affected.” R9 primarily uses the Trinity Waters Facebook in order to stay abreast with current issues and events: ~~–w~~e attempt to stay consistent with our partner organizations, like Trinity Waters, in the information that we release on Facebook, our website, and other forms of communication. Monitoring the Trinity Waters Facebook page allows us to do so.” Responses to objective three were almost exclusively limited to the application of information on personal property or farms or dissemination to others as shown in Table 3.

Table 3

Research objective 3: Describe how recipients have applied information that was learned from the Trinity Waters page

Theme*	Respondents									
	R1	R2	R3	R4	R5	R6	R7	R8	R9	Totals
Did not learn anything	1				1					2
Disseminated information to others		1	1	1		1		1	1	6
Applied information at home/farm			1	1			1	1		4

***Note: some interviews may have presented more than one theme.**

Objective Four

The fourth objective was to describe user-desired improvements for the Trinity Waters Facebook page. Suggestions for improvements were offered by seven of the respondents (R1, R2, R4, R5, R6, R8, R9) as depicted in Table 4.

The largest noted area of improvement was the frequency of status updates in friends' news feeds. R4 noted that "I would recommend that the Trinity Waters page stays current and active in sharing information with its constituents and that it find ways to engage new 'friends' or 'likes'. R9 concluded that "Trinity Waters has waxed and waned about how much content comes across. Some of them that just hammer you with information all the time, it's more important to have valuable content over a large volume."

Table 4

Research objective 4: Describe user-desired improvements to the Trinity Waters page

Theme*	Respondents									
	R1	R2	R3	R4	R5	R6	R7	R8	R9	Totals
I don‘t think I'm TW‘s target audience	1									1
I think it's great for landowners	1									1
It's too general, needs to be Trinity River specific	1				1			1		3
Politically influenced commentary by TW (negative)		1								1
I don't see many posts from TW	1	1		1		1	1	1	1	7
None			1	1						2
High value/relevance content									1	1

***Note: some interviews may have presented more than one theme.**

R6 added

> [M]ore updates to be at the top of the newsfeed. I enjoy some of the weekly conservation messages/games/quizzes/photos that similar pages post once a week or multiple times per week. More photos are always an eye grabber to look into the article posted.”

R8 said ~~–it~~ is very general. There is lots of information that isn‘t Trinity specific. I think it could focus down on the Trinity and use the Trinity to express a lot of those ideas better.” On the contrary, another respondent noted that they would like to see Trinity Waters ~~—p~~st articles that apply to the basin and other important articles that cover situations and conservation efforts elsewhere too that could be applicable to the Trinity River and basin” (R5). R1 noted that:

> I think that I'm outside of their target audience, but I think that it's good for landowners in the basin and also other people that aren't so intertwined with it as a job. If I were to make it what I thought I would use the Trinity River to focus on overlying water issues.

Other respondents commented about the impact of political influences on the Trinity Waters page. R2 stated that "some commentary is, I think, a little bit leading or off-base, or politically influenced. I think there is some ad-lib commentary that may be a little opinionated". Alternatively, R9 stated that "Trinity Waters' page refrains from outright political influence".

The intent of this study was to begin to formulate best practices for Facebook use by the Trinity Waters program and potentially other similar-objective programs by investigating page follower uses and gratifications. The response rate was low (n=9) and many of the respondents were either highly active in the Trinity River basin or were otherwise Trinity Waters stakeholders. The majority of followers who applied knowledge gained from the Trinity Waters page (n=8) shared the information with others (n=6). The most noted area for improvement of the page was the frequency of status updates or posts on the Trinity Waters page. The majority (n=6) of respondents requested increased posts per week.

CHAPTER V

CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

This study examined the uses and gratifications of Trinity Waters Facebook page followers. The study explored motivations for following the page, what followers received from the page, application of information received from the page, and solicited recommendations for improvements to the page. Specifically, this study sought to determine why people follow the Trinity Waters Facebook page and implications to tailor the page for the user‘s needs.

The data can only be generalized to the nine respondents of this study. All nine respondents were very positive in regards to the Trinity Waters page. The respondents did offer a window into what extension clientele are seeking.

Conclusions

The data suggests that Trinity Waters Facebook page followers sought to fulfill a need for information regarding conservation issues from the Trinity Waters Facebook page and to also network with others of similar interests. The majority of respondents (*n*=5) reported following the page for informational purposes. In addition, five respondents (*n*=5) reported following the page in order to network with others who are interested in water and environmental issues. These data supports the Guo et al. (2010) determination that SNS users were ―seeking information, convenience, connectivity, problem solving, content management, social presence, and context clues‖ when using SNSs (p. 361). In addition, Cheung et al. (2011) found that social presence was the primary reason for selecting Facebook as a primary SNS. Facebook allows users to

recognize similarities among their peers and build relationships with them (Cheung et al., 2011). The data also supports the Smock et al. (2011) conclusion that Facebook usage is driven by three motivations- entertainment purposes, information sharing, and social interactions.

Smock et al.'s (2011) findings pertaining to information sharing also support the data in that many respondents (*n*=6) reported further dissemination of information gained from the Trinity Waters site. While some respondents applied the information directly, others utilized information received for secondary purposes. Secondary purposes included: republishing of information in newsletters, staying abreast with current issues, and applying information in classrooms. The results of this study strongly support Katz's (1974) theory that users are seeking to fill multiple types of needs – informational and social – in particular in the case of this study. Additionally, the passing on of important information could be viewed as a civic service which Park et al. (2009) found to be more likely from SNS users who seek information than those using SNS for strictly social purposes.

The majority of respondents wanted more frequent access to extension information that was relevant to their lives. In addition, the majority reported having applied information received from the page. The page followers also were interested in networking with their peers. This supports Xu et al.'s (2012) conclusion that SNS users determination that immediate access to information as a primary motivation for using SNSs. Additionally, the data supports Katz et al.'s (1974) conclusions that people may

use media in order to fulfill various types of perceived needs, including cognitive or informational needs, and affective or emotional needs.

The data reinforced Bahner et al.'s (2012) conclusion that due to the widespread adoption of social media, it is an ideal medium for the delivery of educational content. In addition, the data also supported Rhoades et al.'s (2008b) findings that due to the familiarity and comfort level of social media for students, educators can use SNS's to communicate with and engage their students. The use of social media for the dissemination of information is underscored by Diem et al.'s (2011) detection of a shift in diffusion- from authoritative sources to social networks. Valenzuela et al. (2009) concluded that technology broadens social networks by allowing the efficient maintenance of weak ties. Due to this strengthening of weak ties, SNS such as Trinity Waters' Facebook page, are prime vehicles for the dissemination of information among peers (Rhoades et al., 2008a).

Recommendations and Implications

Recommendations and Implications for Practice

Waters et al. (2009) provided several recommendations for non-profit organization pages, some of which could be implemented by Trinity Waters. Recommendations that Trinity Waters could employ include listing the Facebook administrators openly on the page, posting Trinity Waters-related announcements, providing links to news releases, and campaign summaries if applicable (Waters et al. 2009). In addition, Waters et al. (2009) also suggested providing ways for page

followers to volunteer, donate to a cause, contact page administrators, and also provide ―an organizational calendar of events" (Waters et al., 2009, p. 103).

Objective One

The respondents seek information about water and conservation issues, in addition to networking opportunities with peers. Social interaction and successes in finding information will encourage return visits to the page per Rhoades et al. (2008a). By providing up-to-date information regarding issues pertaining to the Trinity River Basin, the Trinity Waters Facebook page will cater to the wishes if its followers. Additionally, followers are seeking opportunities to meet others of similar interests. Trinity Waters should make an effort to publicize meetings, events, and gatherings in which page followers may establish new connections with their peers.

These findings are congruent with the Katz et al. (1973) conclusion that consumers seek out media sources to fill needs ―elated to strengthening information, knowledge, and understanding (p. 166)" in addition to social type needs which are ―needs related to strengthening contact with family, friends, and the world" (p. 167). In addition, the desire of Trinity Waters followers to network with others lends to Katz et al. (1973) concluding that social needs also include interpersonal support. The Trinity Waters page followers' desire for social interaction with others is supported by Raacke and Bonds-Raccke's (2008) findings that the top five reasons college students use Facebook is to interact with new and old acquaintances, and also to establish new connections.

Objective Two

The primary reported information gained from the Facebook page by these users pertained to upcoming events and seminars. This strongly supports the findings in objective one where followers seek information about networking opportunities. Facilitating the circulation of upcoming events, even those not sponsored directly by Trinity Waters, may provide a valuable service to the page followers. With collaboration from other programs, the Trinity Waters Facebook page could effectively provide a ~~"~~one stop shop" for information regarding upcoming water and conservation issues in the Trinity River basin. Smock et al. (2011) postulated that Facebook should be viewed as a toolbox of features, rather than one big tool.

Inter-organization collaboration would also support the second most reported theme of seeking information for dissemination to others. By sharing information among organizations, the breadth of dissemination would be greatly increased. This would also allow users of multiple organizations to be exposed to new networking opportunities through other Facebook and SNS pages. Waters et al. (2009) concluded that stakeholder engagement in non-profit SNSs was impacted by the non-profit's disclosure information on the page. Of all the features that Water el al. (2009) evaluated, the majority of pages were lacking dissemination of information and page involvement or interaction.

Objective Three

Trinity Waters followers have primarily applied information received from the page indirectly through dissemination to others. This underscores the importance of facilitating the sharing and distribution of high quality, relevant content on the page.

Four (*n*=4) respondents noted applying information at their home or personal land. Further inquiry could be warranted in determining the number of posts regarding applicable practices were made by Trinity Waters, and also determining if and what type of applicable information that followers seek. Guenther and Swan (2011) found that farmers welcomed the use of Facebook and electronic communication. In addition, Guenther and Swan (2011) concluded that those who use SNSs for personal or employment related purposes also prefer to use the same type of SNS for learning.

Providing followers with a question and answer space or opportunities to ~~–a~~sk the expert" on various topics could also provide followers with interactive ways to engage in with the page and with peers. This would also allow followers to gain specific information that may be applied in their lives. A beneficial byproduct of this may also be determining what topics followers are most interested in and seek to learn more about. In addition, Rader (2011) suggested soliciting page content contributions from highly active and knowledgeable page followers. Rader noted that Master Gardener volunteers were tapped as a valuable resource for building high-quality content for the Internet (2011). Similarly, Trinity Waters could tap current highly-involved volunteers to develop content for the Facebook page. Telg et al. (2008) concluded that a successful extension program not only incorporates the communication of content, but also facilitates a conversation with the public in such a way that ~~–c~~reates awareness and stimulates interest" (p. 1).

Two respondents reported learning nothing from or receiving no information from the page. Upon evaluating a Florida Master Gardner Facebook page, Strong and

Alvis‘ (2011) concluded that the page could be strengthened by including all Gagné‘s (1985) nine conditions of learning. The Trinity Waters page may have provided information for these respondents, however if performance was not elicited nor feedback provided, the respondents may not be aware that learning took place (Gagné, 1985). Wang et al. (2012) concluded that unmet social and habitual needs may actually have a looping, endogenous effect that drives continued social media usage. These unmet needs may motivate increased future use of social media (Wang et al., 2012). These respondents may be following the page for informational or awareness needs rather than needs pertaining to educational information disseminated by Trinity Waters.

Objective Four

The most profound discovery as a result of this study was the frequency in which Facebook page followers wanted status updates. Seven of the nine respondents noted that they would like to see more posts or status updates from Trinity Waters. Waters et al., (2009) concluded that simply creating and maintaining a Facebook page is not sufficient to prompt participation or awareness. Unintentionally, the Trinity Waters has become what Waters et al., (2009) described as an established but inactive site.

Blake Alldredge, administrator of the Trinity Waters Facebook page, noted that ―Facebook changed the way pages are seen by fans in the beginning of October [2012] so I‘m getting about a quarter of the reach that I did before‖ (personal communication, November 14, 2012). Although respondents were not questioned about the specific time frame in which they began following the Trinity Waters Facebook page, the noted dissatisfaction in post frequency could be attributed to a change in the Facebook news

feed algorithm, EdgeRank (Wildman, n.d.). Of the biggest fan-requested areas of improvement – frequency of posts – may in fact not be the easiest to resolve. In September 2012, Facebook modified the EdgeRank algorithm that effectively determines which Trinity Waters news feed posts do or do not make it to a follower‘s news feed (Wildman, n.d.)

It is possible that Trinity Waters followers have not decreased participation or awareness due to a true lack of posts by Trinity Waters, but due to Facebook‘s EdgeRank algorithm that resulted in Trinity Waters posts being excluded from follower‘s news feeds. Since most users visit their preferred SNS on a daily basis (Boyd & Ellison, 2007) it is important for Trinity Waters, or any organization, to publish relevant content throughout the day.

As discussed with Blake Alldredge, the Trinity Waters page has suffered a great decrease in traffic following the EdgeRank algorithm change in the fall of 2012 (14 November 2012). By informing followers what they can do in order to receive notifications of Trinity Waters posts, the fan participation could greatly increase due to heightened awareness of Trinity Waters status updates.

According to EdgeRank.net:

> Every action…is a potential newsfeed story. Facebook calls these actions "Edges." That means whenever a friend posts a status update, comments on another status update, tags a photo, joins a fan page, or RSVP's to an event it generates an "Edge," and a story about that Edge might show up in the user's personal newsfeed.

> It'd be completely overwhelming if the newsfeed showed all of the possible stories from your friends. So Facebook created an algorithm to predict how interesting each story will be to each user. Facebook calls this algorithm "EdgeRank" because it ranks the edges. Then they filter each user's newsfeed to only show the top-ranked stories for that particular user. (Wildman, n.d.).

By doing this, Facebook is trying to determine what is most important to the user and bring that content to the top of the news feed. Unfortunately, the EdgeRank weight is determined by interactions (clicks, likes, comments, shares) with content (Wildman, n.d.). Simply viewing a status update in your news feed will not add any weight to that particular update. This underscores the necessity of user interaction with the Trinity Waters page. Increasing user interaction will in turn increase the occurrence or frequency of Trinity Waters content appearing on a follower‘s news feed.

Trinity Waters followers may also alter their personal Facebook account settings in order to receive notifications of all updates to the Trinity Waters page. Figure 2 illustrates the avenue in which Facebook users may change their page subscription settings in order to receive notifications of all status updates. The user must first access the Trinity Waters homepage. From the home page, the user will need to hover over the ―Liked‖ box, and then select ―Get Notifications‖. Simply selecting ―Show in News Feed‖ will not automatically show all updates in the users news feed.

By selecting ―Get Notifications‖ the user will receive a notification each time a new post is made on the Trinity Waters page. Should a user find the notifications to be bothersome, they may repeat the subscription process and deselect ―Get Notifications‖ to

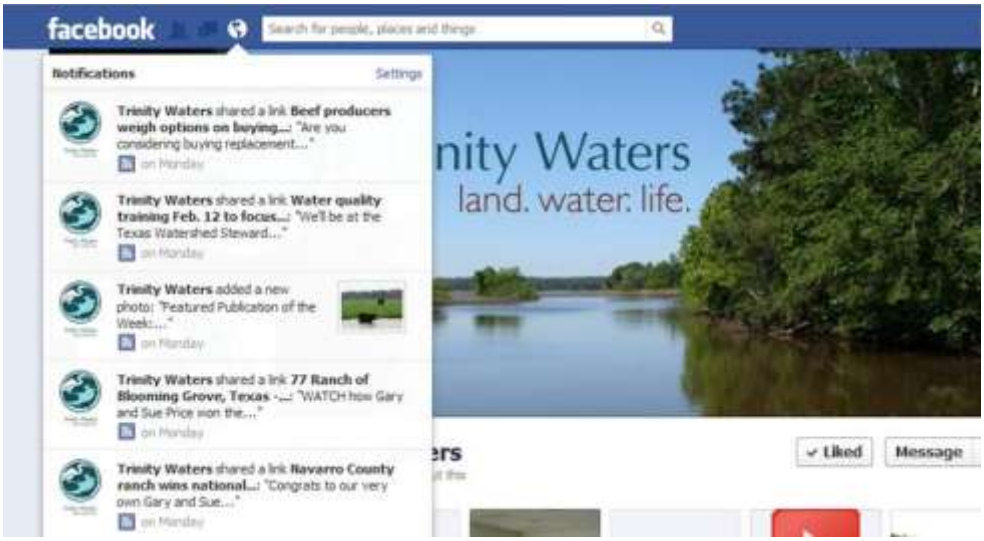
disable the feature. Figure 3 shows the notifications that will be received for each status update.

Figure 2

How to change Facebook page notification subscriptions

Figure 3

Illustration of Facebook Notifications that will be received once a follower subscribes to the "Get Notifications" feature



Recommendations and Implications for Practitioners

In addition to encouraging followers to subscribe to page notification updates, educating extension professionals on the effective use of social media outlets could be very beneficial. Diem et al. (2011) concluded that current extension programs are not meeting the needs of today‘s constituency. Today‘s consumer demands ample easily-accessible information online (Diem et al., 2011). In addition, these same consumers are no longer willing to attend traditional face-to-face classes, which results in decreased attendance at extension programs and finally decreased overall audience (Diem et al., 2011). Unfortunately, many of today‘s extension agents are unfamiliar with or are unaware of SNS (Diem et al., 2011). As a historical leader in innovative tools and

practices, the extension program has altogether failed to embrace new information dissemination technologies such as SNSs (Diem et al., 2011).

Reyneke et al. (2008) warned that ignoring social media could potentially lead to the demise of a brand. The extension must embrace social media as an avenue to boost stakeholders‘ views of the organization (Haigh et al., 2013). One avenue to connecting with customers is to focus on page follower‘s unfulfilled needs and provide an avenue for achievement of those needs via the Facebook page (Piskorski, 2011). Further, Rader (2011) emphasized the necessity of social media in order for extension to remain significant in today‘s society. Extension programs must dedicate significant time, money, and personnel to the development and deployment of ―relevant, unbiased, research-based information‖ (Rader, 2011, para. 14).

Facebook Marketing has up-to-date articles and how-to‘s on utilizing the free and paid features of Facebook in order to promote a brand or business. In 2010 the United States Department of Agriculture‘s (USDA) Agriculture Marketing Service (AMS) issued a grant to the Farmers Market Federation of New York in order to teach New York farmers how to use social media to market their businesses (2010). The initiative was so successful that eventually the program was utilized to recruit volunteer ―Friends of the Market‖ in order to assist in the promotion of farmer‘s market activities (USDA, 2010).

The Farmers Market Federation of New York (FMNY) mirrors many extension programs as there is little funding for proper marketing or advertising of the products offered. As a result of the USDA AMS grant, a series of educational workshops were presented, in addition to fact sheets and how-to tutorials that were accessible at any time

via the FMNY website. The use of social media allowed farmers to connect with and establish personal relationships with clientele.

Haigh et al.(2013) stressed the importance of interacting with Facebook followers in order to build rapport. While Haigh et al. (2013) were dealing with a traditional retail clientele; extension agents may employ similar marketing strategies in order to build their client or learner base. In a similar evaluation of brand management and marketing, Piskorski (2011) recommended that organizations must focus on meeting client‘s unmet needs by lowering the cost or barriers, facilitating relationship building, and also having customers recruit others by networking with peers. This study concluded that visitors to the Trinity Waters are seeking water conservation information and networking opportunities. By focusing efforts on fulfilling those needs, page followers are more likely to return.

In order to determine what followers are utilizing, Smock et el. (2011) recommended conducting a detailed critique of each feature of a Facebook page, rather than the page as a whole. Smock et al. (2011) also determined that social interaction was one of the primary drivers behind commenting on status updates. Those seeking information however, did not interact with as many pages. If the majority of Trinity Waters followers are seeking information rather than social interaction, trying to elicit comments or other page interactions may be futile.

Recommendations and Implications for Further Study

Based on the findings, there are several opportunities for further study. Conducting survey research by administering a summative scale questionnaire to the

Trinity Waters followers may yield valuable insight. Summative scale surveys may be conducted regarding the desired frequency of status updates, desired content, types of posted or shared content, and desired types of networking events or educational opportunities. Summative scale questionnaires may be administered electronically and may also be completed at the participant‘s convenience.

Performing a detailed analysis of the Facebook Insights reports over a period of time could also yield valuable data. By studying the Insights reports, the researcher may gather data on Facebook user interactions with the published content. The Facebook Insights reports may also yield a valuable resource for comparison with the summative scale questionnaire for determining how many status updates are provided by Trinity Waters, and how many are actually reported being viewed by page followers.

Conducting a social media needs analysis of the Trinity Waters program or other extension program may also be warranted. By evaluating the program‘s needs and determining areas for improvement, a social media guide for extension professionals could be developed. Creating a knowledge bank for social media materials intended for extension professionals may be particularly helpful, as was demonstrated with the FMNY (USDA, 2010).

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APPENDIX A

Q1: What is your motivation or reason for visiting the Trinity Waters Facebook page?

Q2: What have you learned from or received from the Trinity Waters Facebook page?

Q3: How have you applied information that you have learned from the Trinity Waters page?

Q4: What enhancements would you recommend for the Trinity Waters page?

APPENDIX B

Howdy Trinity Waters Friends!

As a graduate student at Texas A&M University, I am researching the use of Trinity Waters. My data collection involves interviews with Trinity Waters users. I am simply interested in your experiences with the program and will not be collecting any personal information. The interviews are 3 to 4 questions and approximately 30 minutes in length. All interviews will either be audio recorded so I can accurately transcribe the collected data, or I can email you the questions and you can respond at your leisure.

As a result of this study, recommendations may be made in order to improve Trinity Waters and make it better suit *your* needs. If you are willing to participate in an interview or would like more information, please contact me at pamhunt@aggienetwork.com or 214-796-6027.

Thank you,

Pam Hunt