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A Mixed Methods Approach of Communication Campaign Development and Assessment: Identifying the Needs of an Audience and Determining the Value in Evaluation

**A Mixed Methods Approach of Communication Campaign Development and Assessment:
Identifying the Needs of an Audience and Determining the Value in Evaluation**

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Agricultural and Extension Education

by

Tara Lynn Johnson
University of Arkansas
Bachelor of Science in Agricultural Education, Communications and Technology, 2011

August 2014
University of Arkansas

This thesis is approved for recommendation to the Graduate Council.

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Dr. Leslie D. Edgar
Thesis Director

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Dr. Brian E. Haggard   Dr. K. Jill Rucker
Committee Member   Committee Member

ABSTRACT

The two articles presented in this thesis used both quantitative and qualitative research methods to examine two distinct stages of communication campaigns: research and evaluation. In the quantitative study, students ($n = 440$) at the University of Arkansas were surveyed to determine their perceptions of the Arkansas Water Resources Center (AWRC), water resources, and water issues. A questionnaire was developed from an existing instrument, reviewed by a panel of experts, pilot tested, and revised. The researchers found participants were most aware ($M = 3.23$, $SD = 1.14$), concerned ($M = 4.07$, $SD = 0.86$), and interested ($M = 4.10$, $SD = 0.87$) in drinking water quality. Students who participated were least aware of the AWRC ($M = 2.23$, $SD = 1.10$) with 67.6% of students reporting either a low or very low level of awareness. The data showed direct positive correlations between students' overall interest, awareness, and concern of water. Interest and awareness had a strong positive correlation, $r = .61$, $p < .0001$. Also, interest and concern had a strong positive correlation, $r = .75$, $p < .0001$. There was a moderate positive correlation between awareness and concern, $r = .50$, $p < .0001$. Additionally, there were direct positive correlations between students' class experiences, their interest in learning more about the AWRC and their overall interest, awareness, and concern of water. The researchers recommend the AWRC use the demographics reported to target specific audiences groups with educational messages about drinking water quality, the AWRC's activities, and water research. The results indicate a need for more water centers and natural resource organizations to identify perceptions among audience groups to determine effective messaging routes.

In the second study, a team of agricultural communications researchers at the University of Arkansas utilized semiotic and content analyses to qualitatively assess the visual and content elements of a commodity group's promotional campaign. The purpose of this study was to

analyze and assess the youth outreach portion of a communication campaign developed for a large commodity promotion board in Arkansas. The content of each creative piece was systematically analyzed using content code sheets. Visually, content was coded denotatively, then connotatively to identify emergent themes. Textual content was coded for recurrent themes. This study identified emergent themes and determined message accuracy and quality of creative pieces. Findings revealed 24 emergent themes, with 234 theme occurrences, within 11 creative pieces used to target the "youth" audience, a message accuracy of 81.8%, and an overall quality score between "fair" and "average" ($M = 2.21$; $SD = 0.61$). The top five themes identified through the content analysis included: how [commodity] is produced (13.25%), benefits to Arkansas economy (10.26%), [commodity] is grown in Arkansas (9.83%), promotion of [commodity] Board (9.40%), and human benefits (6.84%). In-depth interviews with key players were used to support the researchers' analysis. Additional content analyses should be completed to determine themes, message accuracy, and quality of promotional materials from agricultural commodity campaigns to determine strengths and weaknesses within the industry.

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DEDICATION

This thesis is dedicated to my parents, little sister, and Stephen Clement. Mom and Dad, thank you for making school a priority. Thank you for teaching me that education is what's most important. Thank you for making sacrifices. Mom thank you for teaching me about how to care for animals, for reading to me every night even if I wanted to hear Green Eggs and Ham a million times, and for homeschooling me in the beginning. Without your influence I wouldn't be the learner I am today. Dad, thank you for teaching me how to be tough, observant, and smarter than most so I could choose. Melissa Jean, thank you for being silly, sweet, and always encouraging me. You'll always be my Melvin.

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CHAPTER I: INTRODUCTION

Need for the Study

Rapid advances in science plus global shifts of economy, trade and the environment constantly alter the landscape of agriculture (Osborne, 2007). Because the climate of the agricultural industry is so dynamic, a guide for future research in agriculture is imperative to lead researchers to valuable research areas that address current problems (Osborne, 2007). For this reason, a research agenda has been developed to guide agricultural researchers. Osborne (2007) noted "the development of a national research agenda coincides with increasing recognition in the colleges of agricultural and life sciences and related agencies of the value and unique contributions of social science research in developing sound solutions for complex agricultural problems" (p. 2). To ensure quality research, a research agenda is published by the American Association for Agricultural Education (Doerfert, 2011).

The current 2011-2015 research agenda is a guide for colleagues across various agricultural systems to identify key problems facing the agricultural community. These key problems are divided into six priorities intended to inspire collaboration and research for the greater good of agriculture (Doerfert, 2011). One critical priority area for scientific research is to improve public and policy maker understanding of agriculture and natural resources (Doerfert, 2011). With a growing population and less than 2% of the United States population living on a farm, the need for consumers to be informed about agricultural practices is high (Doerfert, 2011).

Communication campaigns are increasingly becoming an industry standard as agricultural companies and commodity groups continue to find value in investing in outreach programming (Arkansas Soybean Promotion Board, n.d.a ; Beef Checkoff, 2013; California Milk Advisory Board, 2013; Cotton Incorporated, 2013). Communication campaigns should target

specific audience segments with messaging tailored to the characteristics of the audience (Guth & Marsh, 2006; Marshall & Johnston, 2010; Rice & Atkin, 2013). Additionally, campaign preparation in the form of a needs assessment and evaluation determine the effectiveness of a campaign and is imperative to the success of outreach initiatives (Guth & Marsh, 2006).

Few people are directly involved in production agriculture resulting in the need for an agriculturally literate public to make informed decisions (Doerfert, 2011). Previous research in agricultural literacy has laid the foundation for current outreach initiatives by increasing understanding of messaging, delivery, and effectiveness (Frick, Kahler, & Miller, 1991; Hess & Trexler, 2011a; Pense, Beebe, Leising, Wakefield, & Steffen, 2006; Reidel, Wilson, Flowers, & Moore, 2007), but more research is needed as the industry and its challenges continue to evolve (Doerfert, 2011, Hess & Trexler, 2011a; Edgar & Rutherford, 2012). "In spite of more than 20 years of agricultural literacy research success, changes within agriculture and our society have increased the need for further research" (Doerfert, 2011, p. 13).

Problem Statement

The current landscape of agriculture is dynamic and constantly changing. Consumer focused outreach is necessary to maintain and, ideally, improve public understanding (Doerfert, 2011). Because a needs assessment is an essential element to a successful communications campaign (Barnard & Parker, 2012; Rice & Atkin, 2013), research that establishes and affirms effective marketing and evaluation practices has value. Additionally, evaluating existing campaigns to identify strengths and weaknesses leads to viable information for industry professionals on best practices. Evaluation is an instrumental stage in campaign design and determines a campaign's effectiveness and efficiency (Guth & Marsh, 2006). It was

recommended evaluation be implemented during all of the phases of the dynamic public relations process (Guth & Marsh, 2006). Therefore, there is a need for research that identifies audiences' communication needs and evaluates existing campaigns.

Purpose Statement

Arkansas Water Resources Center's Audience Needs

The purpose of this study was to quantitatively assess current University of Arkansas students' perceptions of the Arkansas Water Resources Center to define communication campaign goals.

Soybean Campaign Evaluation

The purpose of this study was to qualitatively analyze and assess the youth outreach portion of a public relations campaign developed for a large commodity promotion board in Arkansas. The semiotic analysis of the creative materials within the campaign was necessary to create a precise account of the intended messages portrayed to the targeted youth audience and determine if meanings behind those messages were audience appropriate.

Objectives

Arkansas Water Resources Center's Audience Needs

The purpose of this study was to quantitatively assess current University of Arkansas students' perceptions of the Arkansas Water Resources Center (AWRC) to define communication campaign goals. The following research objectives were developed to guide this study:

1. Determine current University of Arkansas students' perceptions of water resources and issues.

2. Determine current University of Arkansas students' level of interest in water resources and issues.

       a.   Determine current University of Arkansas students' perceptions of the AWRC.

       b.   Determine current University of Arkansas students' level of interest in receiving information about the AWRC.

3. Determine the relationships between university student interest, awareness, and concern of water issues.

4. Determine the relationship between students' class experiences, their interest in learning more about the AWRC, and their interest, awareness, and concern of water issues.

Soybean Campaign Evaluation

1. Complete a content analysis of creative pieces targeted at youth and identify any emergent themes.

2. Determine the accuracy of outlined and implied messages for each creative piece.

3. Assess the quality of creative works used in the campaign's youth outreach.

4. Determine the opinions of key players who assisted with event recruitment using in-depth interviews.

5. Determine the effectiveness of content in the youth outreach portion of an Arkansas commodity board's promotional communication campaign.

Terms

<u>Communication</u> – The execution phase and third step of the dynamic public relations process.

However, this step can be performed at any time throughout the process. Here

practitioners disseminate messages from the campaign to the audience (Guth & Marsh,

2006).

<u>Communication Campaigns</u> – An organized set of communication activities that feature a variety

of messages across multiple channels that purposely intends to inform or influence

behaviors of audiences during a specific time period (Rice & Atkin, 2013).

<u>Dynamic Public Relations Process</u> – This model follows the traditional four step public relations

model where public relations campaigns are created in four phases: research, planning,

communication, then evaluation. However, this version allows any process to be

completed at any time and recognizes that public relations resides in a world that

continues to change. Practitioners still follow the general guidelines and phases in the

traditional model, but they allow more readily for adjustments, additional evaluation,

planning, research and, communication during any phase (Guth & Marsh, 2006).

<u>Evaluation</u> – The identification of how efficient and effective a campaign was and the fourth step

of the dynamic public relations process. However, this step can be performed at any time

throughout the process (Guth & Marsh, 2006).

<u>Needs Assessment</u> – Preliminary research that identifies and assesses the needs of an audience,

which drives the campaign (Rice & Atkin, 2013). This falls under research in the

dynamic model of the public relations process (Guth & Marsh, 2006).

Planning – This is the strategy phase and second step of the dynamic public relations process

  where practitioners develop a plan based on the results from their research. This phase

  can be performed at any time throughout the process (Guth & Marsh, 2006).

Research – This phase is where practitioners gather information to identify clients' needs. This

  is the first step of the dynamic public relations process, but can be performed at any time

  throughout the process (Guth & Marsh, 2006).

Water Consumption – Any water withdrawn from a source of any kind that is not directly

  returned to its original source. All withdraws from ground water are considered

  consumptive (Minnesota Department of Natural Resources, 2014).

Assumptions

   The following assumptions were made prior to and during the completion of these

studies:

Arkansas Water Resources Center's Audience Needs

1. Subjects answered all questions to the best of their ability.

2. Subjects participating in this study were representative of the general student population

  of the University of Arkansas in 2014.

Soybean Campaign Evaluation

1. Campaign materials provided by The Communications Group were accurate

  representations of the 2012 communication campaign.

2. Coders' evaluation of creative materials were consistent with actual responses from youth

  in the state of Arkansas.

Limitations

Arkansas Water Resources Center's Audience Needs

When reading or repeating this study, it is important to remember generalizations should not be made beyond the students who participated in the study. The results of this study are only generalizable to the 440 students who filled out the surveys. Because the sampling procedure used in the study was convenience sampling, the sample may not be entirely representative of the population because of bias.

Soybean Campaign Evaluation

When reading or repeating these studies, it is important to remember generalizations should not be made beyond the creative materials used or key players interviewed in the study. The results are only generalizable to the 11 creative materials assessed and the two key players interviewed.

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CHAPTER II: REVIEW OF LITERATURE

Introduction

The following literature review discusses nine contextual areas related to the study: (1) agricultural literacy; (2) checkoff programs; (3) Arkansas Agriculture; (4) Arkansas' water resources (5) communication campaigns; (6) experiential learning; (7) social constructivism; (8) audience theory; and (9) semiotic analysis.

Agricultural Literacy

Researchers in agricultural education began to understand and define the concept of agricultural literacy in the early 1990s (Hess & Trexler, 2011a). Though the definition continues to evolve as the industry changes, agricultural literacy has been defined as a person's ability to understand the agriculture industry's significance economically, socially, and environmentally and to communicate those with others (Frick, Kahler, & Miller, 1991; Hess & Trexler, 2011a; Pense, Beebe, Leising, Wakefield, & Steffen, 2006; Reidel, Wilson, Flowers, & Moore, 2007). As students become further removed from the farm, outlets that provide agricultural knowledge or increase agricultural literacy are imperative (Reidel et al., 2007). Additionally, the public continues to push for agricultural reform and become more involved in agricultural policy decisions (Hess & Trexler, 2011a). It is important for those voting on agricultural policy to have a working understanding of the system (Doerfert, 2011). Therefore, it is imperative to provide students with knowledge pertaining to agriculture so they can make informed decisions in the future (Reidel et al., 2007).

Checkoff Programs

Many modern checkoff programs use their funding to promote and educate the public

about the commodities they represent (Eldridge, 2003; Williams & Capps, 2006). "Commodity checkoff programs are primarily cooperative efforts by groups of suppliers of agricultural products intended to enhance their individual and collective profitability" (Williams & Capps, 2006, p. 53). Nearly every agricultural commodity has a checkoff program or similar organization whose ultimate purpose is to market the commodity (Williams & Capps, 2006). Checkoff boards are funded through fees from producers' sales and others in the particular commodity's marketing chain (Eldridge, 2003; Williams & Capps, 2006). Promotion boards are independent from one another, but each have regulations that guide the board's spending towards initiatives to increase the market and demand for the product (Zwagerman, 2009). "The federal research and promotion programs are operated pursuant to federal statute. Each program is authorized by its own federal statute and is based upon proposals made by the industry" (Zwagerman, 2009, p. 151). Some commodities also have state checkoff programs or even independent programs (Williams & Capps, 2006; Zwagerman, 2009).

Arkansas Agriculture

The largest industry in Arkansas is agriculture (Arkansas Farm Bureau, n.d.). In fact, the agricultural industry annually adds around $16 billion to the state's economy (Arkansas Farm Bureau, n.d.). More than 49,000 farms produce agricultural products on 14.5 million acres of diverse farmland (Arkansas Farm Bureau, n.d.). Additionally, Arkansas ranks nationally in the production of several agricultural products including rice, baitfish, catfish, broilers, cotton, turkeys, forestry, grain sorghum, eggs and soybeans (Arkansas Farm Bureau, n.d.).

Soybeans are grown in 50 of Arkansas' 75 counties and account for 3.2 million of Arkansas' production acres annually (Arkansas Soybean Promotion Board, n.d.a). When the soybean crop is sold, each producer funds the checkoff program by contributing 0.5% of the

market price per bushel (Arkansas Soybean Promotion Board, n.d.b). Of the checkoff funds

collected from Arkansas farmers, 50% remains in Arkansas and is controlled by the Arkansas

Soybean Promotion Board (Arkansas Soybean Promotion Board, n.d.b). The remaining 50% is

given to ASPB's national counterpart, the United Soybean Board (Arkansas Soybean Promotion

Board, n.d.b). Both ASPB and USB utilize the checkoff program to appropriate funding for

promotion and research (Arkansas Soybean Promotion Board, n.d.b). The mission of the

Arkansas Soybean Promotion Board is to "improve sustainability and profitability of the soybean

industry in Arkansas" (Arkansas Soybean Promotion Board, n.d.a, para. 1).

Arkansas' Water Resources

Soybeans commonly require irrigation because they need between 20 and 25 inches of

water throughout the duration of their growing season (Ross & Grimes, 2014). Irrigation is one

of the largest uses of water in the state (Pennington et al., n.d.). In fact, Arkansas is one of the

top five states with the largest area of irrigated land (NASS, 2008). On average, agricultural

production uses about 70% of the world's fresh water (Pennington et al., n.d.). Additionally, in

Arkansas if you own or lease property that is contiguous to a waterway, the Riparian Water

Doctrine dictates you have a right to the reasonable use of that water (Pennington et al., n.d.).

Arkansas is split into six major river basins and has 282 identified groundwater aquifers

(Pennington et al., n.d.). "On a typical day, Arkansans get 34% of their water from surface water

sources and 66% from groundwater sources" (Pennington et al., n.d., p. 16).

Conceptual Framework

Communication Campaigns

The landscape of modern agriculture is shifting as technology, the environment, and

global economy continue to change (Doerfert, 2011). The purpose of the National Research Agenda (NRA) developed by the American Association for Agricultural Education is to identify the priority areas for research to further the interests of modern agriculture (Doerfert, 2011). These key problem areas were divided into six priorities intended to inspire collaboration and research for the improvement of agriculture for 2011 through 2015. One of the priority areas for research needs identified in the NRA is to improve public and policy maker understanding of agriculture and natural resources (Doerfert, 2011). With most school children removed from the farm by at least two generations, it is important to evaluate youth outreach and identify successful practices for educating youth about agriculture (Doerfert, 2011).

Many commodity organizations have recognized the need for educational outreach and have become industry advocates, investing in campaigns to inform the public (Arkansas Soybean Promotion Board, n.d.a; Beef Checkoff, 2013; California Milk Advisory Board, 2013; Cotton Incorporated, 2013). In fact, outreach campaigns are becoming an industry standard with commodity groups across the nation funding promotional and educational initiatives. For example, as mentioned above, the Arkansas Soybean Promotion Board and its national counterpart the United Soybean Board fund promotional educational outreach campaigns to educate consumers (Arkansas Soybean Promotion Board, n.d.b).

Communication campaign design should begin with a needs assessment to identify learning opportunities, possible barriers, and potential outcomes (Barnard & Parker, 2012; Rice & Atkin, 2013). Organizations should also identify and target specific segments of a population rather than trying to reach broad audience groups (Guth & Marsh, 2006; Marshall & Johnston, 2010; Rice & Atkin, 2013). Basically, if audiences are specific on certain demographic characteristics, messages designed to meet the needs of those characteristics have increased

effectiveness because they were tailored to the intended audience (Rice & Atkin, 2013). "Audience analysis is an ongoing, iterative process that informs you of the best ways to appeal to your audience, develop your influence and, when appropriate, change their behavior as your campaign story moves towards its conclusion" (Barnard & Parker, 2012, p. 77). An additional effect on the target audience is the quality of the influences created through the communications or public relations campaign (Barnard & Parker, 2012). Every element of a creative product communicates with that product's audience, including design (Guth & Marsh, 2006). A high-quality creative product gives off a completely different, and more positive image, than a creative product of low quality (Guth & Marsh, 2006).

In the dynamic model of the public relations process, it is recommended that evaluation occur at each phase (Guth & Marsh, 2006). There are four phases in the model consisting of research, planning, communication, and evaluation. The dynamic model of the public relations process is shown in Figure 1-1. "Evaluation research cannot be an afterthought; practitioners are expected to articulate at the outset of any campaign how success is defined" (p. 208). Evaluation is needed to identify the strengths and weaknesses of communication campaigns (Telg & Irani, 2012). "With practitioners facing greater demands for accountability, every public relations plan must achieve an impact that is measurable" (Guth & Marsh, 2006, p. 208). Evaluation of communication campaigns helps the organization determine if the outcome or program was effective in achieving its goals and its efficiency (Rice & Atkin, 2013).
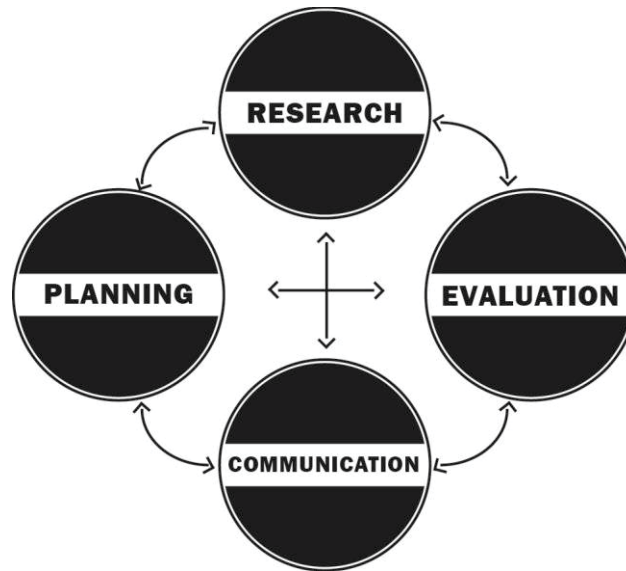
Figure 1-1. The Dynamic Model of the Public Relations Process (Guth & Marsh, 2006)

Theoretical Framework

Campaign Timeline
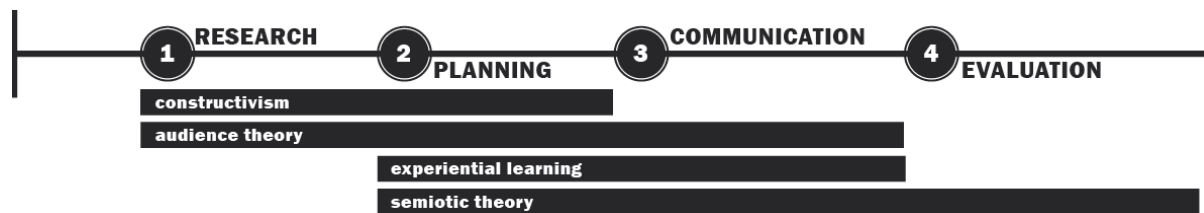
Figure 1-2. A Linear Campaign Development Timeline to Illustrate the Role of Theories

Experiential Learning

Research shows experiential learning activities are effective in reinforcing learning

during outreach. "Learning from experience is one of the most fundamental and natural means

of learning available to everyone" (Beard & Wilson, 2006, p. 15). Therefore, interaction

between the learner and the environment is a foundation of learning (Beard & Wilson, 2006;

Kolb, 1984). Additionally, experiences do not simply go away at the end of a learning event or

activity, each experience is reinforced, and perhaps modified, through further experiences that

may influence the learner's attitudes (Dewey, 1938). This forms the basis of the Experiential

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Learning Theory, which can be further explained as the process by which knowledge is created through experience (Kolb, 1984). One effect that can impact experiential learning either positively or negatively is the participant's attitudinal position about the event or experience (Beard & Wilson, 2006). Another factor influencing the success of an experiential learning activity or event is if participants perceived the event as being of high quality (Dewey, 1938).

Constructivism

Experiential learning is further supported by and aligned with constructivist theory in that both postulate an individual's experiences shape how they interpret meaning (Roberts, 2006). Doolittle and Camp (1999) noted the most important element of constructivism was learners create their own meaning based on past experiences. Additionally, constructivist theory describes how the development of knowledge is not done passively, but rather actively through an individual's cognition (Doolittle & Camp, 1999). In other words, the learners, in this case members of the campaign target audience, are active members in the learning process. With this in mind, it is important for those who develop educational campaign materials to research and gain insight into what their audience already knows to achieve a more sophisticated level of understanding (Hess & Trexler, 2011b).

Constructivist theory has multiple tenets and is often described as a continuum (Doolittle & Camp, 1999). The tenets of constructivist theory can be emphasized differently and result in different paradigms of constructivism that move along the continuum (Doolittle & Camp, 1999). "Typically this continuum is divided into three broad categories: Cognitive Constructivism, Social Constructivism, and Radical Constructivism" (Doolittle & Camp, 1999, para. 17). Social constructivism emphasizes learning is collaborative in nature (Berkeley, 2014). Social constructivists assert knowledge is a result of social interaction and is shared among individuals

rather than being an entirely individual experience (Doolittle & Camp, 1999). In other words, humans view their own experiences through language and cultural lenses (Berkeley, 2014). Language and culture are the frameworks for how humans experience reality (Berkeley, 2014).

Audience Theory

Selecting specific segments of an audience to target is an important part of campaign development (Guth & Marsh, 2006; Marshall & Johnston, 2010; Rice & Atkin, 2013). The word audience, though a commonly used term, is the collective term for those that receive a campaign's message (McQuail, 2005). McQuail (2005) elaborated "audiences are both a product of social context (which leads to shared cultural interests, understandings and information needs) and a response to a particular pattern of media provision" (p. 396). Therefore, although audiences consist of many individuals with no ties to one another, they are defined and connected with one another in some way (McQuail, 2005). Demographic information such as age and gender can define an audience, but they can also be defined by geographic location, income, political beliefs, and many other traits (McQuail, 2005; Rice & Atkin, 2013). "Audiences may be thought of by communicators in terms of their tastes, interests, capacities or their social composition and their location" (McQuail, 2005, p. 417). Additionally, how audience members utilize media depends on their personal realities (McQuail, 2005). In other words, audience members consume media based on what they need, think, and, even, feel. Thus, effective messaging targets audience members by appealing to what they need, think, and feel (Barnard & Parker, 2012; McQuail, 2005).

Semiotic Theory

Semiotics is a content-driven theory that discusses how people assign meanings to visual elements (Lester, 2011). "Recent use of semiotics theory has been noted in the field of mass

communication. Semiotics [is used to] decode the meaning of a visual image through examination of signs" (Tolbert & Rutherford, 2009, p. 7). Semiotics, simply put, is the study of signs (Lester, 2011; Manghani, 2013). More specifically, semiotics is a theory of the production and interpretation of meaning based on images (Edgar & Rutherford, 2012). "The 'sign' is the most fundamental unit of mainstream semiology" (Rose, 2012, p. 113). According to semiotic theory, signs can take many different forms including words, images, sounds, gestures, and objects (Chandler, 2002; Lester, 2011; Manghani, 2013; Rose, 2012). Signs are comprised of two parts, signified and signifier (Rose, 2012; Manghani, 2013). The signified is an object or a concept while the signifier is the sound or image attached to the signified (Rose, 2012). Fundamentally, the sign is the representation of the signified (Rose, 2012).

Chapter Summary

Communication campaigns are an essential outreach tactic for agricultural organizations. Though agricultural literacy and its dissemination strategies have been a topic of research for a number of years, the industry is constantly changing, as is the population, thus creating a demand for more research on the topic. Identifying an audience's needs is an essential step in the development of a communication campaign strategy. By performing these needs assessments, the researcher can inform the selected organization and assist them in improving their strategy, as well as add to the body of knowledge on agricultural literacy. Another essential element of communication campaigns, as demonstrated by the literature, is evaluation. Researchers should evaluate existing campaigns for strengths and weaknesses to inform industry professionals of effective strategies and tactics to avoid. After reviewing the literature, it was apparent that further research on needs assessments and evaluation procedures using existing organizations can provide insights for industry professionals.

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CHAPTER III: METHODOLOGY

These studies were reviewed and approved by the University of Arkansas Internal

Review Board (IRB). The AWRC study was given the IRB protocol number 13-11-226

(Appendix A). The Soybean study was given the IRB protocol number 12-12-320 (Appendix B).

Arkansas Water Resources Center's Audience Needs

Design and Subject Selection

This research was a descriptive-correlational study utilizing survey methodology.

The population of the study was ($N = 24,537$) current students enrolled at the University of

Arkansas. A sample size was determined using a Survey System calculator. With a confidence

level of 95% and a margin of error of 5%, the sample size needed is 378 (SurveySystem, n.d.).

The researchers selected the sample group of current University of Arkansas students based on

convenience sampling where subjects are chosen because of their availability (McMillan &

Schumacher, 2010). Participating students were those who heard about the survey in some way

and chose to complete the survey. The researcher used a university wide electronic newsletter,

fliers, and word of mouth to advertise the survey. To ensure the needed sample size was

reached, the researcher sent the link to faculty members asking them to pass it along to their

classes. The researcher also spoke to three classes to promote the survey.

Instrumentation

The researcher used a 26 item web-based questionnaire (Appendix C) hosted on Qualtrics

to collect data from the sample. The Tailored Design Method was used to construct and

implement the instrument (Dillman, Smyth, & Christian, 2009). The study utilized a

questionnaire, because it is economical, ensures anonymity, and creates the same experience for

each respondent (McMillan & Schumacher, 2010). The researcher modified an instrument from

a similar study conducted at the University of Arkansas. Faculty members with survey expertise assessed the original instrument for content validity as well as the modified version used in this study.

Reliability coefficients were calculated by randomly selecting 10 students to pilot the survey as a measure of instrument stability. The students were current graduate and undergraduates at the University of Arkansas. They were first sent an email asking for their participation. Then, they were individually emailed a link to the survey with a unique code. The last question of the survey asked them to input their code. After 10 days, the students were emailed again asking to retake the survey. Again, they had to input their code. Of the 10 students randomly selected to participate, seven students fully completed the pilot. The researcher then organized the results by the codes used SPSS 17 to determine reliability. In the pilot of this questionnaire, the pre-test was found to have a Cronbach's Alpha of .87. The post-test resulted in a Cronbach's Alpha of .81.

The first section of the questionnaire consisted of perception questions. Participants were asked to rank their feelings about 11 statements. They were asked to rank their feelings based on a 5-point Likert scale where 1 = very low, 2 = low, 3 = uncertain, 4 = high, and 5 = very high. This section of the survey asked questions to determine the participants' perceptions and interest in different water issues and uses, as well as the AWRC. For example, respondents were asked to identify their level of interest or concern about a variety of different topics in the water industry like water quality, water issues, water resources, waterways, water research, etc.

The next 10-item section of the questionnaire asked respondents about their experiences on campus, their interest in research, their interest in receiving information from the AWRC, and their preferred method of information transfer. This section was designed to identify current

University of Arkansas students who were interested in sustainability and/or water, leadership, research, graduate studies, and/or the AWRC. This section also asked if respondents have received information about the AWRC in the past. Finally, this section asked what kind of water research programs the respondent would like to see on-campus.

The final section of the questionnaire was intended to describe the demographics of the respondents. In this section, five questions were used to identify age, gender, classification, which University of Arkansas school the respondent belonged to, and the size of the community they grew up in. The researcher used this demographic information to describe those most interested in water. This information was then used to tailor the AWRC's communication strategies to the appropriate demographic.

After completing the pilot study, a panel of faculty members ($n = 3$) reviewed the results and made modifications to the questionnaire. The panel agreed that more emphasis needed to be placed on the first section of the questionnaire to strengthen the survey and any resulting findings. The expanded section contained questions based on interest, awareness, and concern for various water topics and issues. The section originally had 11 statements to identify students' perceptions and was modified to include 30 statements. Thus, increasing the total number of items to 45. The intent of the study was not changed.

The questionnaire was advertised via a university-wide electronic newsletter, promotional fliers, and word-of-mouth. Students could access the survey using a link from the electronic newsletter or a QR code on the promotional flier. QR codes provide a direct link when scanned from a mobile device. As the Tailored Design Method suggests, an incentive was utilized (Dillman, Smyth, & Christian, 2009). Potential participants were notified that five people would be randomly selected to receive $100 gift cards.

Data Analysis

Descriptive and correlation statistics were used to analyze the data gathered during the study.

Soybean Campaign Evaluation

Design and Subject Selection

An Arkansas commodity promotion board hired a full-service, local, regional, and national marketing, advertising, and public relations firm to develop a mass media public relations campaign to promote the commodity. Per the agreement reached by the two parties, the firm was tasked to supply the commodity promotion board with the following core campaign deliverables in 2012 to directly meet the needs of the youth (ages 12-18 as outlined by the public relations firm who developed the promotional material) target audience: (a) website, (b) educational video, and (c) a presence at various statewide events with an educational booth and supporting materials. A team of agricultural communications researchers at the University of Arkansas utilized semiotic analysis to qualitatively assess the visual and content elements of the commodity group's campaign.

All creative pieces produced by the public relations firm in 2012 for the youth target audience were evaluated in a systematic, content driven approach to assess the potential impact on perceptions of individuals (Edgar & Rutherford, 2012). Eleven creative pieces were coded for emergent themes and then were evaluated for quality according to accepted professional standards (Telg & Irani, 2012). Finally, a perceived message for each piece was derived. A database of emergent themes was developed during analysis of the promotional pieces created in the commodity campaign and used to target youth. The implied message was compared with the identified message listed by the full-service public relations firm for each creative piece.

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Instrumentation

There were 24 emergent themes, with 234 theme occurrences, identified in promotional pieces used to target the youth audience. Themes were derived from visual and content analysis. Following Lincoln and Guba's (1985) constant comparative method, words and passages were coded in their original context (Creswell, 1998). Key themes emerged that characterized the creative pieces and their corresponding intended messages used to target youth. Throughout the coding process new themes were added as necessary and at the end of the process themes were compressed where needed. Credibility of the findings was achieved through content code sheets, member checking, and the use of expert interviews of individuals involved with student recruitment for commodity-based educational events. Trustworthiness and dependability were established through purposive sampling, the use of thick description, and the use of an audit trail supporting key findings.

The researchers created print, visual, video, and quality code sheets (Appendix D) based on industry standards to guide the coding process. The print code sheet was used to analyze the creative materials containing mostly copy (e.g., print advertisements and news releases) and transcriptions of videos that were a part of the campaign. Again, because the process of analyzing content is systematic and replicable (Edgar & Rutherford, 2012) a code sheet was used to guide the process and words were compressed into categories based on the specific coding rules in this technique (Weber, 1990).

Visual coding sheets were used for creative materials contained a visual element. The visual materials were analyzed denotatively: the contents of the images were deconstructed and researchers listed key words based on what they immediately saw when looking at the image. Next, the objects in the photo were analyzed for connotations, and the associative value of the

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photos was assessed (Edgar & Rutherford, 2012). "For example, an image of a tropical island would have a basic denotative reading of a tropical location, and a possible connotative reading of a vacation or relaxation and slow living" (Rhoades & Irani, 2008, p. 36). This approach created a careful and precise account of how the meanings within images from the campaign were perceived (Rose, 2012). Similarly, the video coding sheet guided the researchers through identifying the denotative and connotative values of the visuals used in each video. Video transcriptions were also coded to identify emergent themes.

Quality coding sheets were developed and used by the researchers to evaluate the quality of each individual creative piece. Two quality sheets were used. The first sheet had sections for images, design elements, and video techniques. The image section required researchers to identify image composition used. Next, the design elements section required the researchers to identify design composition used in the creative piece being analyzed. Finally, the video portion of the first coding sheet required researchers to identify the types of shots used and take an inventory of the visuals. Overall, the goal of the first coding sheet was to establish a frame of reference for the second quality code sheet. The second quality code sheet was developed as a way for the researchers to assign a numerical rating to the quality of the piece. The copy, images, design, video, and/or audio elements of each piece were ranked on a 5-point Likert-type scale from 1 (poor quality) to 5 (excellent quality). Quality characteristics were determined by accepted professional journalist and print standards. Telg and Irani (2012) noted the Associated Press as the accepted writing style every journalist and public relations professional should use. Image quality was based on the use of accepted professional photography principles including focus, angles, rule of thirds, lines, and/or depth of field. For design elements, common design principles were used to judge each creative piece including: balance, proportion, order, contrast,

similarity, and unity. Finally, video quality was determined by the use of video shot

composition, content, and video quality (Telg & Irani, 2012). The researchers determined the

mean and standard deviation of the quality ratings for each piece through statistical analysis,

leading to an overall quality rating for each public relations piece developed to target youth.

Before proceeding with the content evaluation of the campaign, two researchers

independently assessed four creative pieces: (a) print ad, (b) logo, (c) press release, and (d) event

signage. Then the researchers compared their individual analyses and measured their inter-coder

reliability in the form of percent agreement. This process was repeated until the researchers

consistently averaged above 70% of interpretations in agreement. A high percentage of

agreement (70% or higher) among researchers during data collection proves the reliability of the

coding process (McMillan & Schumacher, 2010). Once agreement among the researchers

reached an acceptable percentage, each creative piece for the youth audience was coded

independently. Again, agreement was assessed. Researchers maintained an average of 87.52%

agreement when coding the promotional materials used to target the youth audience. Agreement

was established by evaluating how often two or more researchers agree on what they have

analyzed (McMillan & Schumacher, 2010). Usually there is a level of consensus between

qualitative researchers, but, often, the way the researchers individually identify themes is

different (Armstrong, Gosling, Weinman & Marteau, 1997). The researchers in this study

originally identified similar themes in different ways, but after discussion and repeating their

analyses, agreement, and like-mindedness was reached. Ultimately, because the researchers

found a high level of agreement consistency in evaluation was established (McMillan &

Schumacher, 2010). Last, the use of multiple researchers during the data collection and analysis

process enhanced the design validity of the study (McMillan & Schumacher, 2010). A panel of

faculty advisors consisting of two agricultural communications professors and one agricultural communications instructor oversaw this process as suggested by McMillan and Schumacher (2010) to ensure study validity.

Quality and effectiveness of the campaign's events were assessed by performing a content analysis on teaching and learning materials produced for the commodity board's youth outreach events. Researchers supplemented content evaluation of the youth outreach portion of the campaign with in-depth interviews of key players involved in the implementation of the youth events. In-depth interviews can be defined as a set of questions posed by a trained interviewer to a key audience member to gather information on what the subject knows about a certain topic (Burns & Bush, 2006). Two key players were interviewed to gain insight and feedback into FFA and 4-H member involvement in the 2012 [commodity education event] at the [celebrity endorser's] farm. The interviews were conducted over the phone by the researcher. A questioning guide was developed by the panel of experts and was used for both interviews. Interviews were recorded and transcribed. A thematic analysis was performed on the interview transcripts, using open and axial coding methodology (Lincoln & Guba, 1985; Strauss & Corbin, 1998) in which general themes were identified (open coding) and further refined through deeper examination into more specific themes (axial coding).

The interview data was used to determine key player perceptions of the strengths and weaknesses of the events used to target youth in the promotional campaign. "The objective is to obtain unrestricted comments or opinions and to ask questions that will help the marketing researcher better understand the various dimensions of these opinions as well as the reasons for them" (Burns & Bush, 2006, p. 221). The researchers used the in-depth interviews to gain necessary, personal feedback about the youth outreach component of the communication

campaign. Responses from in-depth interviews can be more revealing than those in a structured

survey and, thus, can be an advantage to the overall evaluation of a campaign by providing

actual, unrestricted input from a key person (Burns & Bush, 2006).

Data Analysis

"Qualitative data analysis is primarily an inductive process of organizing data into

categories and identifying patterns and relationships among the categories" (McMillan &

Schumacher, 2010, p. 367). The researchers in this study used inductive analysis to synthesize

and draw meaning from the data in the campaign deliverables by identifying categories and

patterns (McMillan & Schumacher, 2010).

During content analysis, the researchers analyzed text to identify key words in context

(Gall, M., Gall, J., & Borg, 2006; Weber, 1990). From the key words in context, emergent

themes were identified and compressed (Gall et al., 2006). After completing the content

analysis, the identified recurring, emergent themes (Gall et al., 2006; Lincoln & Guba, 1985)

were used to ascertain the implied message in each piece. Once the implied message was

identified, it was compared with the intended message identified by the public relations firm in

its original campaign plan. In the comparison, the researchers assessed if the intended message

corresponded with the perceived message. If the perceived message and the intended message

were cohesive, it was determined the piece had accurate messaging. If the perceived message

and the intended message were not cohesive, it was determined the piece's messaging was

inaccurate. Some creative pieces did not have an identified intended message in the original

campaign plan; in that case the message accuracy was inconclusive.

Reflexivity Statement

I acknowledge that I entered the research project with my own views of the world based

on previous experiences. I also recognize my prior notions could have led to biases and assumptions.

I've had a lot of exposure to agriculture growing up in rural Arkansas. My parents own and operate a turkey production farm for Butterball, LLC and I was involved in both FFA and 4-H for many years. I continued my involvement with the agriculture industry by pursuing a bachelor's degree in Agricultural Communications at the University of Arkansas. Thus, I have personal experience as a youth in Arkansas, the demographic targeted by the campaign. Though I may be able to identify with the audience targeted by the campaign, I realize the average member of Arkansas' youth population may not share my extensive knowledge of agriculture.

Additionally, I have industry experience in communications and had some prior experience with the campaign and the firm that created it. I also had contact with some of the firm's employees who executed a campaign event. However, I did not desire a specific outcome for the study or have a personal interest in the campaign. Serving as a researcher, evaluating the communication campaign gave me more insight into the theory and practice of campaign evaluation. However, I understand my prior industry experience may have given me preconceived notions about campaigns in general, as well as the campaign evaluated in this study.

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Appendices

Appendix A

AWRC IRB Approval

November 18, 2013

MEMORANDUM

TO:	Tara Johnson Brian Haggard Leslie Edgar
FROM:	Ro Windwalker IRB Coordinator
RE:	New Protocol Approval
IRB Protocol #:	13-11-226
Protocol Title:	*Arkansas Water Resources Center Campaign Development*
Review Type:	☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 11/18/2013 Expiration Date: 11/17/2014

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (http://vpred.uark.edu/210.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 3,000 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

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The University of Arkansas is an equal opportunity/affirmative action institution.

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Appendix B

Soybean IRB Approval

UNIVERSITY OF ARKANSAS

February 22, 2013

MEMORANDUM

TO:	Casandra Cox
	Leslie Edgar
	Jeff Miller
	Tara Johnson
	Amy Huges
FROM:	Ro Windwalker
	IRB Coordinator
RE:	PROJECT MODIFICATION
IRB Protocol #:	12-12-320
Protocol Title:	*Arkansas Soybean Promotion Board (ASPB) Communications Evaluation: Interviews with Producers*
Review Type:	☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 02/22/2013 Expiration Date: 12/16/2013

Your request to modify the referenced protocol has been approved by the IRB. **This protocol is currently approved for 200 total participants.** If you wish to make any further modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

Please note that this approval does not extend the Approved Project Period. Should you wish to extend your project beyond the current expiration date, you must submit a request for continuation using the UAF IRB form "Continuing Review for IRB Approved Projects." The request should be sent to the IRB Coordinator, 210 Administration.

For protocols requiring FULL IRB review, please submit your request at least one month prior to the current expiration date. (High-risk protocols may require even more time for approval.) For protocols requiring an EXPEDITED or EXEMPT review, submit your request at least two weeks prior to the current expiration date. Failure to obtain approval for a continuation *on or prior to* the currently approved expiration date will result in termination of the protocol and you will be required to submit a new protocol to the IRB before continuing the project. Data collected past the protocol expiration date may need to be eliminated from the dataset should you wish to publish. Only data collected under a currently approved protocol can be certified by the IRB for any purpose.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

Appendix C

Questionnaire

UNIVERSITY OF ARKANSAS CURRENT STUDENT AWRC SURVEY

You have been asked to participate in a research study to determine your perceptions of the Arkansas Water Resources Center at the University of Arkansas. Your completion of the survey represents your implied consent to participate in this study. All records will be anonymous. You can contact Tara Johnson at (479) 575-2035 or tljohnso@uark.edu or Dr. Leslie Edgar at (479) 575-6770 or ledgar@uark.edu for questions about the study. This research study has been reviewed by the Institutional Review Board at the University of Arkansas. For research-related problems or questions regarding subjects' rights, you can contact Ro Windwalker, the University's Compliance Coordinator, at (479) 575-2208 or irb@uark.edu. Your time and responses are greatly appreciated.

Part I: Perceptions of the Arkansas Water Resources Center
For each question noted below, circle the number to the right that best fits how you feel. Use the rating scale to select the number that best fits your personal belief of each question.

Perception Questions	Scale				
	Very Low	Low	Uncertain	High	Very High
1. What is your level of *interest* in drinking water quality?	1	2	3	4	5
2. What is your level of *interest* in environmental (lakes, streams, etc.) water quality needs?	1	2	3	4	5
3. What is your level of *interest* in agricultural water quality needs?	1	2	3	4	5
4. What is your level of *interest* in water issues?	1	2	3	4	5
5. What is your level of *interest* in the protection of water resources?	1	2	3	4	5
6. What is your level of *interest* in the future of water resources?	1	2	3	4	5
7. What is your level of *interest* in waterways in Arkansas?	1	2	3	4	5
8. What is your level of *interest* in volunteer opportunities for water-related activities and events?	1	2	3	4	5
9. What is your level of *interest* in water research?	1	2	3	4	5
10. What is your level of *interest* in water research being conducted at the University of Arkansas?	1	2	3	4	5
11. What is your level of *interest* in the Arkansas Water Resources Center?	1	2	3	4	5

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	1	2	3	4	5
12. What is your level of *interest* in learning more about the Arkansas Water Resources Center?	1	2	3	4	5
13. What is your level of *awareness* about drinking water quality?	1	2	3	4	5
14. What is your level of *awareness* about environmental (lakes, streams, etc.) water quality needs?	1	2	3	4	5
15. What is your level of *awareness* about agricultural water quality needs?	1	2	3	4	5
16. What is your level of *awareness* of water issues?	1	2	3	4	5
17. What is your level of *awareness* about the protection of water resources?	1	2	3	4	5
18. What is your level of *awareness* about the future of water resources?	1	2	3	4	5
19. What is your level of *awareness* of waterways in Arkansas?	1	2	3	4	5
20. What is your level of *awareness* of volunteer opportunities for water-related activities and events?	1	2	3	4	5
21. What is your level of *awareness* about water research?	1	2	3	4	5
22. What is your level of *awareness* about water research being conducted at the University of Arkansas?	1	2	3	4	5
23. What is your level of *awareness* about the Arkansas Water Resources Center?	1	2	3	4	5
24. What is your level of *concern* about drinking water quality?	1	2	3	4	5
25. What is your level *concern* about environmental (lakes, streams, etc.) water quality needs?	1	2	3	4	5
26. What is your level of *concern* about agricultural water quality needs?	1	2	3	4	5
27. What is your level of *concern* about water issues?	1	2	3	4	5
28. What is your level of *concern* about the protection of water resources?	1	2	3	4	5
29. What is your level of *concern* about the future of water resources?	1	2	3	4	5
30. What is your level of *concern* about waterways in Arkansas?	1	2	3	4	5

The Arkansas Water Resources Center
203 Engineering Hall
Fayetteville, Arkansas 72701
P 479-575-2405
F 479-575-2497
sustain@uark.edu

Part II: AWRC Scenarios
Please circle the letter that best describes how you feel.

31. Have you taken a sustainability class while attending the University of Arkansas?
    a. Yes
    b. No

    <u>If yes</u>, please list the course below.
    _____

    What was your perception of the class.
    _____
    _____
    _____
    _____

    Would you be willing to take another one?
    _____

32. Have you taken a class that addressed water issues, water quality, or water resources while attending the University of Arkansas?
    c. Yes
    d. No

    <u>If yes</u>, please list the course below.
    _____

    What was your perception of the class.
    _____
    _____
    _____
    _____

    Would you be willing to take another one?
    _____

33. Would you consider volunteer opportunities for water-related activities and events?
    a. Yes
    b. No
    If yes, please list your name and email: _____

34. Would you be interested in learning more about current research opportunities with water?
    a. Yes
    b. No

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35. Are you interested in conducting water-based research?
    a. Yes
    b. No
    If yes, please list your name and email: _____

36. Are you interested in pursuing a graduate degree in water resources?
    a. Yes
    b. No

37. Have you received information about the Arkansas Water Resources Center?
    a. Yes
    b. No

38. Are you interested in receiving information about the Arkansas Water Resources Center?
    c. Yes
    d. No
    If yes, please list your name and email: _____

39. How would you prefer to receive information about the Arkansas Water Resources Center?
    a. Email
    b. Social media
    c. University Newswire Headlines
    d. Arkansas Traveler
    e. Pamphlet / brochure
    f. Electronic newsletter
    g. Flyer
    h. Other (please list) _____

40. What kind of water research programs would you like to see on the University of Arkansas campus?
    _____
    _____
    _____
    _____

Part III: Demographics
Please circle the letter by each question that best describes you.

41. What is your current age?
    a. <18 years
    b. 19-24 years
    c. 25-30 years
    d. 31-35 years

    e. 36-40 years
    f. >40 years

42. What is your gender?
    a. Male
    b. Female

43. What is your classification?
    a. Freshman
    b. Sophomore
    c. Junior
    d. Senior
    e. Graduate student

44. Your major is a part of what University of Arkansas School?
    a. Dale Bumpers College of Agriculture, Food and Life Sciences
    b. Fay Jones School of Architecture
    c. J. William Fulbright College of Arts and Sciences
    d. Sam M. Walton College of Business
    e. College of Education and Health Professions
    f. College of Engineering
    g. School of Law
    h. Undeclared major

45. What was the size of the community that you grew-up in?
    a. More than 250,000 people
    b. 100,000 to 249,999 people
    c. 25,000 to 99,999 people
    d. 7,000 to 24,999 people
    e. 3,500 to 6,999 people
    f. Less than 3,500 people

Appendix D

Code Sheets
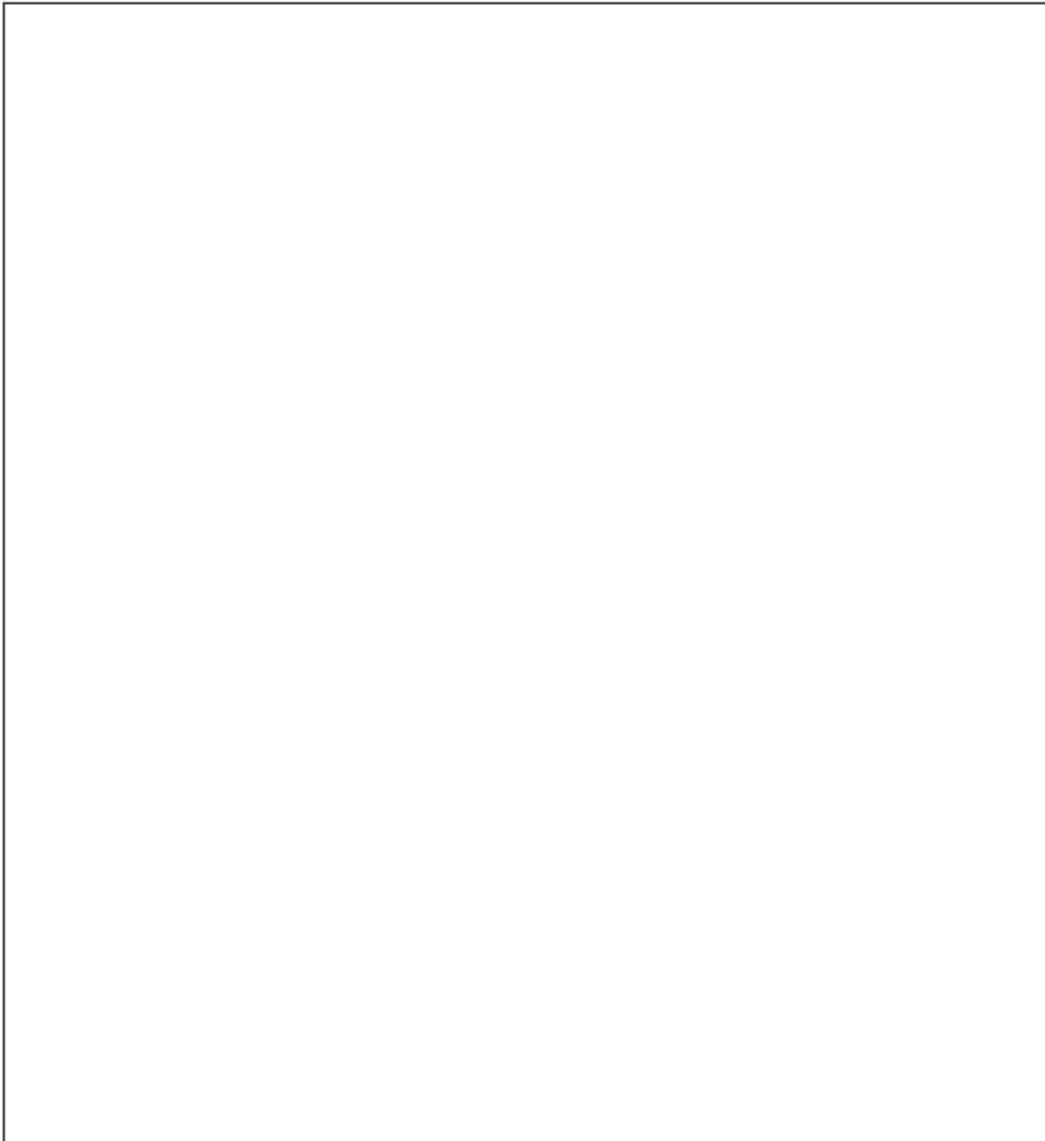
Material Code _____

Coded By _____

Date _____

THEMES
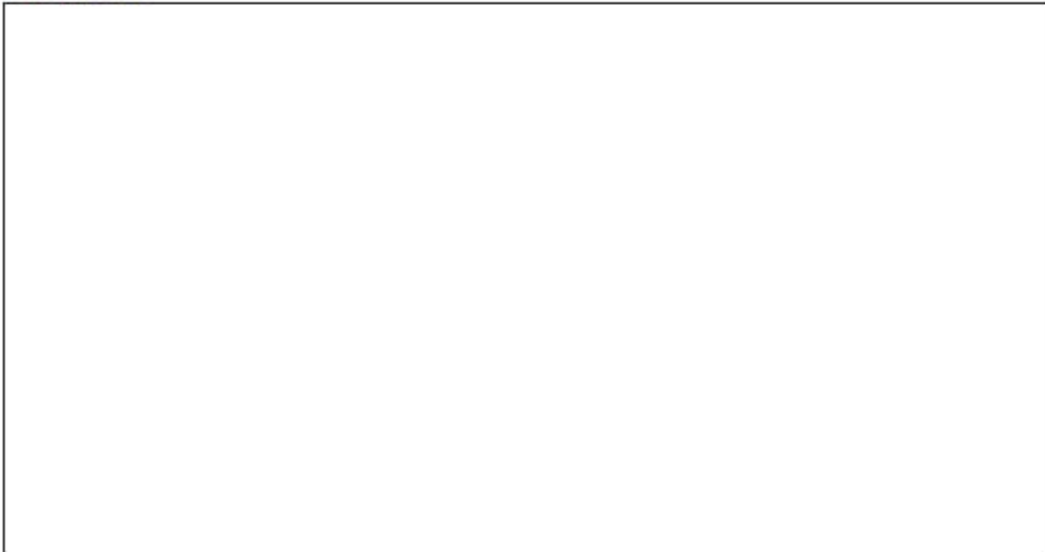
Material Code _____
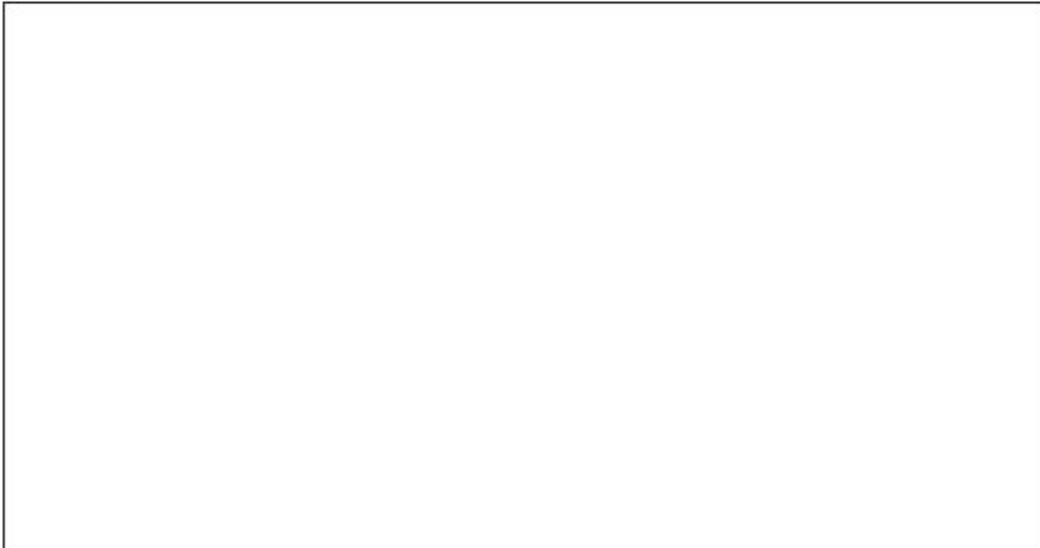
Coded By _____

Date _____

VISUALS

DENOTATIVE

CONNOTATIVE

Material Code _____   **V**IDEO

Coded By _____

Date _____

Title _____

Length _____

Medium _____

Denotatively describe components of the video.

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```

Connotatively describe components of the video.

```



```

Attach transcript to this sheet and code for themes.

Material Code   _____

Coded By   _____

Date   _____

IMAGES

Focus	Yes ☐	No ☐
Angles	Yes ☐	No ☐
Rule of Thirds	Yes ☐	No ☐
Lines	Yes ☐	No ☐
Depth of Field	Yes ☐	No ☐

DESIGN

Balance	Yes ☐	No ☐
Proportion	Yes ☐	No ☐
Order	Yes ☐	No ☐
Contrast	Yes ☐	No ☐
Similarity	Yes ☐	No ☐

VIDEO

Shot Types

    Close up   *Cut in*   *Cut away*   *Mid*   *Full*   *Wide*

Were images used? Yes ☐   No ☐

If so, what composition was used?

    Focus ☐   *Angles* ☐   *Rule of Thirds* ☐   *Lines* ☐   *Depth of Field* ☐

Was a logo shown? Yes ☐   No ☐

COMMENTS

```



```

Material Code _____   **QUALITY 2**

Coded By _____

Date _____

	Poor	Fair	Average	Very Good	Excellent	N/A
COPY						
AP Style	1	2	3	4	5	N/A
Grammar	1	2	3	4	5	N/A
Mechanics/Flow	1	2	3	4	5	N/A
IMAGES						
Composition	1	2	3	4	5	N/A
Lighting	1	2	3	4	5	N/A
Resolution	1	2	3	4	5	N/A
Subject Matter	1	2	3	4	5	N/A
DESIGN						
Composition	1	2	3	4	5	N/A
Unity	1	2	3	4	5	N/A
Appropriateness of Content	1	2	3	4	5	N/A
VIDEO						
Shot Composition	1	2	3	4	5	N/A
Content	1	2	3	4	5	N/A
Lighting	1	2	3	4	5	N/A
Video Quality	1	2	3	4	5	N/A
AUDIO						
Background Noise/Noise Reduction	1	2	3	4	5	N/A
Normalized Signal	1	2	3	4	5	N/A
Power of Expression	1	2	3	4	5	N/A

CHAPTER IV: STUDENT PERCEPTIONS OF THE ARKANSAS WATER RESOURCES CENTER, WATER RESOURCES AND WATER ISSUES

Student Perceptions of the Arkansas Water Resources Center, Water Resources, and Water Issues

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Keywords and Phrases: Campaign needs assessment, natural resources, communications, public relations, perceptions, water

Student Perceptions of the Arkansas Water Resources Center, Water Resources, and Water Issues

Tara Johnson, Leslie D. Edgar, Brian E. Haggard, and K. Jill Rucker

Abstract

In a quantitative study, students ($n = 440$) at the University of Arkansas were surveyed to determine their perceptions of the Arkansas Water Resources Center (AWRC), water resources, and water issues. A questionnaire was developed from an existing instrument, reviewed by a panel of experts, pilot tested, and revised. The researchers found participants were most aware ($M = 3.23$, $SD = 1.14$), concerned ($M = 4.07$, $SD = 0.86$), and interested ($M = 4.10$, $SD = 0.87$) in drinking water quality. Students who participated were least aware of the AWRC ($M = 2.23$, $SD = 1.10$) with 67.6% of students reporting either a low or very low level of awareness. The data showed that positive correlations between students' overall interest, awareness, and concern of water. Interest and awareness had a strong positive correlation, $r = .61$, $p < .0001$. Also, interest and concern had a strong positive correlation, $r = .75$, $p < .0001$. There was a moderate positive correlation between awareness and concern, $r = .50$, $p < .0001$. Additionally, there were direct positive correlations between students' class experiences, their interest in learning more about the AWRC and their overall interest, awareness, and concern of water. The researchers recommend the AWRC use the demographics reported to target specific audiences groups with educational messages about drinking water quality, the AWRC's activities, and water research. The results indicate a need for more water centers and natural resource organizations to identify perceptions among audience groups to determine effective messaging routes.

Introduction

Traditionally the largest industry in Arkansas has been agriculture (Arkansas Farm Bureau, n.d.). In fact, the agricultural industry annually adds approximately $16 billion to the state's economy (Arkansas Farm Bureau, n.d.). More than 49,000 farms produce agricultural products on 14.5 million acres of diverse farmland (Arkansas Farm Bureau, n.d.). Additionally, Arkansas has been ranked nationally in the production of several agricultural products including rice, baitfish, catfish, broilers, cotton, turkeys, forestry, grain sorghum, eggs, and soybeans (Arkansas Farm Bureau, n.d.).

Agricultural irrigation has been one of the largest uses of water in the state (Pennington et al., n.d.). In fact, Arkansas was listed as one of the top five states with the largest area of irrigated land (NASS, 2008). On average, about 70% of the world's fresh water has been used for agricultural production (Pennington et al., n.d.). Additionally, in Arkansas if one owns or leases property contiguous to a waterway, the Riparian Water Doctrine dictates that a person has the right to the reasonable use of that water (Pennington et al., n.d.). Arkansas has been geographically split into six major river basins and has 282 identified groundwater aquifers (Pennington et al., n.d.). "On a typical day, Arkansans get 34% of their water from surface water sources and 66% from groundwater sources" (Pennington et al., n.d., p.16).

Few people are directly involved in production agriculture and there is need for an agriculturally literate public to make informed decisions (Doerfert, 2011). Previous research in agricultural literacy has laid the foundation for current outreach initiatives by increasing understanding of messaging, delivery, and effectiveness (Frick, Kahler, & Miller, 1991; Hess & Trexler, 2011a; Pense, Beebe, Leising, Wakefield, & Steffen, 2006; Reidel, Wilson, Flowers, & Moore, 2007), but more research is needed as the industry and its challenges have evolved

(Doerfert, 2011, Hess & Trexler, 2011a; Edgar & Rutherford, 2012). "In spite of more than 20 years of agricultural literacy research success, changes within agriculture and our society have increased the need for further research" (Doerfert, 2011, p. 13). For this reason, a research agenda was developed to guide agricultural researchers focused on social science discovery. Osborne noted (2007) "the development of a national research agenda coincides with increasing recognition in the colleges of agricultural and life sciences and related agencies of the value and unique contributions of social science research in developing sound solutions for complex agricultural problems" (p. 2). To ensure quality research is completed, a research agenda was published by the American Association for Agricultural Education (Doerfert, 2011).

The current research agenda identified key areas for research divided among six priority areas (Doerfert, 2011). This research fell under the priority area focusing on public and policy makers' understanding of agriculture and natural resources (Doerfert, 2011). Public focused outreach is necessary to maintain and, ideally, improve public understanding (Doerfert, 2011). Hanjra and Quresha (2010) noted "water is a key driver of agricultural production" (p. 365). Agricultural water is a critical element for creating a food secure future, but there have been high demands for water in industrial and urban uses along with increased concern for environmental water quality (Hanjra & Qureshi, 2010; Oladele, 2012). "Pressure on freshwater resources is also intensifying rapidly with climate change, population growth, continuing economic development, and the expansion of biofuel crops, raising the concern of governmental and non-governmental organizations alike" (Ridoutt & Pfister, 2010, p. 113). The success of water management is critical and depends on a delicate balance between environmental needs and human needs (Vörösmarty et al., 2010). "Through the process of continuous experimentation and the use of different farming strategies, agricultural stakeholders are attempting to reach

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sustainability in their operations, environments, and communities" (Oladele, 2012, p. 43).

However, there has been tension over water management at local, national, and international

levels (Hanjra & Qureshi, 2010; Singletary & Daniels, 2004).

One of the greatest challenges of our world is and will continue to be food security and

natural resource preservation (Akeredolu, Ilesanmi, & Otterpohl, 2006; Ridoutt & Pfister, 2010).

Fortunately, increased knowledge among the public and policy makers can aid in creating policy

to make food production and water use more sustainable (Hanjra & Qureshi, 2010). Luckily,

people are becoming increasingly interested in public policy decisions, especially with regard to

natural resources (Singletary & Daniels, 2004). "Agriculture students, teachers, extension

agents, and professionals the world over have become increasingly concerned about

environmental sustainability and the social responsibility of agriculture production" (Conners,

Swan, & Brousseau, 2004, p. 32). Therefore, increasing educational outreach and

communication is essential to create an informed public who can make the appropriate decisions

to protect our most important natural resource. Because a needs assessment has been identified

as an essential element to a successful communications campaign (Barnard & Parker, 2012; Rice

& Atkin, 2013), research that establishes and affirms effective communication practices is

valuable to improve industry understanding about how to identify audiences, how to target

audiences, opportunities for learning, and potential challenges (Guth & Marsh, 2006).

Conceptual/Theoretical Framework

Communication campaign design should begin with a needs assessment to identify

learning opportunities, possible barriers, and potential outcomes (Barnard & Parker, 2012; Rice

& Atkin, 2013). Organizations should also identify and target specific segments of a population

rather than trying to reach broad audience groups (Guth & Marsh, 2006; Marshall & Johnston,

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2010; Rice & Atkin, 2013). Basically, if audiences are specific on certain demographic

characteristics, messages designed to meet the needs of those characteristics have increased

effectiveness because they were tailored to the intended audience (Rice & Atkin, 2013).

"Audience analysis is an ongoing, iterative process that informs you of the best ways to appeal to

your audience, develop your influence and, when appropriate, change their behavior as your

campaign story moves towards its conclusion" (Barnard & Parker, 2012, p. 77).

Selecting specific segments of an audience to target has been identified as an important

part of communication campaign development (Guth & Marsh, 2006; Marshall & Johnston,

2010; Rice & Atkin, 2013). The word audience, though a commonly used term, is the collective

term for those that receive a campaign's message (McQuail, 2005). McQuail (2005) elaborated

"audiences are both a product of social context (which leads to shared cultural interests,

understandings and information needs) and a response to a particular pattern of media provision"

(p. 396). Therefore, although audiences consist of many individuals with no ties to one another,

they are defined and connected with one another in some way (McQuail, 2005). Demographic

information such as age and gender can define an audience, but they can also be defined by

geographic location, income, political beliefs, and many other traits (McQuail, 2005; Rice &

Atkin, 2013). "Audiences may be thought of by communicators in terms of their tastes, interests,

capacities or their social composition and their location" (McQuail, 2005, p. 417). Additionally,

how audience members utilize media depends on their personal realities (McQuail, 2005). In

other words, previous research has shown audience members consume media based on what they

need, think, and, even, feel. Thus, for messaging to be effective, audience members should be

targeted by appealing to what they need, think, and feel (Barnard & Parker, 2012; McQuail,

2005).

Constructivism is a theory describing how an individual actively participates in the development of knowledge through their own cognition (Doolittle & Camp, 1999). Constructivist theory has multiple tenets and is often described as a continuum (Doolittle & Camp, 1999). The tenets of constructivist theory can be emphasized differently and result in different paradigms of constructivism that move along the continuum (Doolittle & Camp, 1999). "Typically this continuum is divided into three broad categories: Cognitive Constructivism, Social Constructivism, and Radical Constructivism" (Doolittle & Camp, 1999, para. 17). Social constructivism emphasizes learning as collaborative in nature (Berkeley, 2014). Social constructivists assert knowledge is a result of social interaction and is shared among individuals rather than being an entirely individual experience (Doolittle & Camp, 1999). In other words, humans view their own experiences through language and cultural lenses (Berkeley, 2014). Language and culture are the frameworks for how humans experience reality (Berkeley, 2014). Thus, to target specific groups of people, their linguistic and cultural predispositions and experiences must be considered (Berkeley, 2014; McQuail, 2005).

Water has been undoubtedly described as our most important resource, yet it has been constantly threatened by human activities (Vörösmarty et al., 2010). The demand for freshwater has only risen, with industry needs, agricultural needs, and the human populations' continued growth (Hanjra & Qureshi, 2010; Oladele, 2012; Ridoutt & Pfister, 2010). Consumers' demands have effected water used in agriculture and industry which has caused tension (Ridoutt & Pfister, 2010; Singletary & Daniels, 2004). Thus, to improve the sustainability of water use there is a need for consumers to be educated about water including how it is used, how it is threatened, and strategies to make water consumption sustainable (Hanjra & Qureshi, 2010; Ridoutt & Pfister, 2010). Water resources research institutions like the AWRC were established in the United

States when Congress passed the Water Resources Research Act in 1964. There is a network of 54 water institutes throughout the 50 states at land-grant universities, as well as at the District of Columbia, Puerto Rico, Guam, and Virgin Islands. The AWRC and other water institutes work with the U.S. Geological Survey and National Institute for Water Resources to help local, state, and federal agencies learn to manage the nations' water resources. Part of the AWRC's mission is to support research that addresses water issues and enhances understanding of those issues as well as disseminate the results of research to industry stakeholders and the public. Therefore, communication campaign research must be done in order for outreach goals to be defined.

Purpose and Objectives

The purpose of this study was to quantitatively assess current University of Arkansas students' perceptions of the Arkansas Water Resources Center (AWRC) in an effort to define communication campaign goals. The following research objectives were developed to guide this study:

1. Determine current University of Arkansas students' perceptions of water resources and issues.

2. Determine current University of Arkansas students' level of interest in water resources and issues.

    a. Determine current University of Arkansas students' perceptions of the AWRC.

    b. Determine current University of Arkansas students' level of interest in receiving information about the AWRC.

3. Determine the relationships between university student interest, awareness, and concern of water issues.

4. Determine the relationship between students' class experiences, their interest in learning more about the AWRC, and their interest, awareness, and concern of water issues.

Methods and Procedures

This research was a descriptive-correlational study utilizing survey methodology. The population of the study was ($N = 24{,}537$) current students enrolled at the University of Arkansas. A sample size was determined using a Survey System calculator. With a confidence level of 95% and a margin of error of 5%, the sample size needed is 378 (SurveySystem, n.d.). The researchers selected the sample group of current University of Arkansas students based on convenience sampling where subjects are chosen because of their availability (McMillan & Schumacher, 2010). Participating students were those who heard about the survey in some way and chose to complete the survey. The researcher used a university-wide electronic newsletter, fliers, and word of mouth to advertise the survey. To ensure the needed sample size was reached, the researcher sent the link to faculty members asking them to pass it along to their classes. The researcher also spoke to three classes in the Dale Bumpers College of Agriculture, Food and Life Sciences to promote the survey.

Instrumentation

The researcher used a 26 item web-based questionnaire hosted on Qualtrics® to collect data from the sample. The Tailored Design Method was used to construct and implement the instrument (Dillman, Smyth, & Christian, 2009). The study utilized a questionnaire, because it is economical, ensures anonymity, and creates the same experience for each respondent (McMillan & Schumacher, 2010). The researcher modified an instrument from a similar study conducted at

the University of Arkansas. Faculty members with survey expertise assessed the original

instrument for content validity as well as the modified version used in this study.

Reliability coefficients were calculated by randomly selecting 10 students who were a

part of the sample, but whom would not participate in the larger study to pilot the survey as a

measure of instrument stability. The students were current graduate and undergraduates at the

University of Arkansas. They were first sent an email asking for their participation. Then, they

were individually emailed a link to the survey with a unique code. The last question of the

survey asked them to input their code. After 10 days, the students were emailed again asking to

retake the survey. Again, students had to input their access code. Of the 10 students randomly

selected to participate, seven students fully completed the pilot. The researcher then organized

the results by the codes used SPSS® version 19 to determine reliability. In the pilot of this

questionnaire, the pre-test was found to have a Cronbach's Alpha of .87. The post-test resulted

in a Cronbach's Alpha of .81.

The first section of the questionnaire consisted of perception questions. Participants were

asked to rank their feelings about 11 statements. They were asked to rank their feelings based on

a 5-point Likert scale where 1 = very low, 2 = low, 3 = uncertain, 4 = high, and 5 = very high.

This section of the survey asked questions to determine the participants' perceptions and interest

in different water issues and uses, as well as the AWRC. For example, respondents were asked

to identify their level of interest or concern about a variety of different topics in the water

industry like water quality, water issues, water resources, waterways, and water research.

The next 10-item section of the questionnaire asked respondents about their experiences

on campus, interest in research, interest in receiving information from the AWRC, and preferred

method of information transfer. This section was designed to identify current University of

Arkansas students who were interested in sustainability and/or water, leadership, research, graduate studies, and/or the AWRC. This section also asked if respondents had previously received information about the AWRC. Finally, this section asked what kind of water research programs the respondent would like to see implemented on-campus.

The final section of the questionnaire was intended to describe the demographics of the respondents. In this section, five questions were used to identify age, gender, classification, which University of Arkansas school the respondent belonged to, and the size of their home community. The researcher used this demographic information to describe those most interested in water. This information was then used to tailor the AWRC's communication strategies to the appropriate demographic.

After completing the pilot study, a panel of faculty members ($N = 3$) reviewed the results and made modifications to the questionnaire. The panel agreed more emphasis needed to be placed on the first section of the questionnaire to strengthen the survey and any resulting findings. The expanded section contained questions based on interest, awareness, and concern for various water topics and issues. The section originally had 11 statements to identify students' perceptions and was modified to include 30 statements. Thus, increasing the total number of items to 45. The intent of the study was not changed. The researchers found the perception items ($n = 30$) to have a Cronbach's Alpha of .96.

The questionnaire was advertised via a university-wide electronic newsletter, promotional fliers, and word-of-mouth. Students could access the survey using a link from the electronic newsletter or a QR code on the promotional flier. QR codes provide a direct link when scanned from a mobile device. As the Tailored Design Method suggests, an incentive was utilized

(Dillman, Smyth, & Christian, 2009). Potential participants were notified that five people would be randomly selected to receive $100 gift cards.

The findings of this study are limited to the participants of the study and cannot be generalized beyond the participants. However, inferences can be made to the findings.

Data Analysis

Descriptive statistics were used to gather means, standard deviations, frequencies, and percentages. Correlation statistics were used to determine any relationships and the strength of those relationships.

Findings

Information regarding the participants' age, gender, classification, and college was collected. Of students who participated in the study, 15.7% ($n = 69$) did not respond to the demographics section. The researchers realize this is a large drop in numbers. Question response numbers lowered gradually through the course of the survey which could be attributed to students taking the survey on mobile devices and missing next page buttons. Qualtrics is not optimized for mobile devices.

The age of students ranged from under 18 to over 40. Students less than 18 years of age represented .2% ($n = 1$), students between 18 and 24 represented 65.5% ($n = 288$), students between 25 and 30 represented 11.1% ($n = 49$), students between 31 and 35 represented 2.7% ($n = 12$), students between 36 and 40 represented 1.6% ($n = 7$), and students older than 40 represented 3.2% ($n = 14$). Students participating in this study were 33.6% ($n = 148$) female and 50.7% ($n = 223$) male. Classification of students were 6.6% ($n = 29$) freshman, 14.5% ($n = 64$) sophomores, 24.3% ($n = 107$) juniors, 24.8% ($n = 109$) seniors, and 14.1% ($n = 62$) graduate students. The following university colleges and schools were represented in the survey: 25.9%

(n = 114) Dale Bumpers College of Agriculture, Food and Life Sciences, 1.6% (n = 7) Fay Jones

School of Architecture, 21.1% (n = 93) J. William Fulbright College of Arts and Sciences, 8.6%

(n = 38) Sam M. Walton College of Business, 8.6% (n = 38) College of Education and Health

Professions, 17.7% (n = 78) College of Engineering, .2% (n = 1) School of Law, and .5% (n = 2)

undeclared major.

Objective one sought to determine current University of Arkansas students' perceptions

of water resources and issues. The researchers broke perceptions up into statements of

awareness (Table 1) and concern (Table 2). Results indicated students were most aware of

drinking water quality (M = 3.23, SD = 1.14) and environmental water quality needs (M = 3.11,

SD = 1.12). Students had the least awareness of the AWRC (M = 2.23, SD = 1.10) and both

water research being conducted at the University of Arkansas (M = 2.36, SD = 1.16) and

volunteer opportunities for water-related activities and events (M = 2.36, SD = 1.08).

Furthermore, students were most concerned with drinking water quality (M = 4.07, SD = 0.86)

and the future of water resources (M = 3.84, SD = 0.97). Students were least concerned with

agricultural water quality needs (M = 3.46, SD = 1.06) and waterways in Arkansas (M = 3.52, SD

= 1.03).

Table 1

Current University of Arkansas Students' Awareness of Water Issues, Water Resources
and the AWRC

Question	n	M	SD
What is your level of awareness about drinking water quality?	393	3.23	1.14
What is your level of awareness about environmental (lakes, streams, etc.) water quality needs?	393	3.11	1.12
What is your level of awareness about agricultural water quality needs?	393	2.73	1.17
What is your level of awareness of water issues?	392	3.05	1.09
What is your level of awareness about the protection of water resources?	393	2.95	1.15

Table 1 (continued)

Question	n	M	SD
What is your level of awareness about the future of water resources?	393	2.90	1.13
What is your level of awareness of waterways in Arkansas?	393	2.69	1.16
What is your level of awareness of volunteer opportunities for water-related activities and events?	392	2.36	1.08
What is your level of awareness about water research?	391	2.44	1.14
What is your level of awareness about water research being conducted at the University of Arkansas?	391	2.36	1.16
What is your level of awareness about the AWRC?	392	2.23	1.10

Table 2

Current University of Arkansas Students' Concern About Water Issues and Water Resources

Question	n	M	SD
What is your level of concern about drinking water quality?	376	4.07	0.86
What is your level of concern about environmental (lakes, streams, etc.) water quality needs?	375	3.82	0.96
What is your level of concern about agricultural water quality needs?	373	3.46	1.06
What is your level of concern about water issues?	374	3.75	0.91
What is your level of concern about the protection of water resources?	375	3.83	0.97
What is your level of concern about the future of water resources?	373	3.84	0.97
What is your level of concern about waterways in Arkansas?	372	3.52	1.03

Objective two sought to determine current University of Arkansas students' level of interest in water resources and issues, their perceptions of the AWRC, and their level of interest in receiving information from the AWRC. As shown in Table 3, students were most interested in drinking water quality ($M = 4.10$, $SD = 0.87$) and the future of water resources ($M = 4.02$, $SD = 0.95$). Students were least interested in water research ($M = 3.06$, $SD = 1.21$) and the AWRC ($M = 3.09$, $SD = 1.05$). As mentioned above, students were also asked about their awareness of the AWRC ($M = 2.23$, $SD = 1.10$). Finally, students were asked to report their interest in learning more about the AWRC ($M = 3.15$, $SD = 1.18$).

Table 3

Current University of Arkansas Students' Interest in Water Issues, Water Resources and the AWRC

Question	n	M	SD
What is your level of interest in drinking water quality?	440	4.10	0.87
What is your level of interest in environmental (lakes, streams, etc.) water quality needs?	440	3.85	0.94
What is your level of interest in agricultural water quality needs?	440	3.42	1.08
What is your level of interest in water issues?	440	3.67	0.98
What is your level of interest in the protection of water resources?	440	3.95	0.94
What is your level of interest in the future of water resources?	440	4.02	0.95
What is your level of interest in waterways in Arkansas?	440	3.63	1.03
What is your level of interest in volunteer opportunities for water-related activities and events?	440	3.17	1.12
What is your level of interest in water research?	440	3.06	1.21
What is your level of interest in water research being conducted at the University of Arkansas?	440	3.35	1.14
What is your level of interest in the AWRC?	440	3.09	1.05
What is your level of interest in learning more about the AWRC?	440	3.15	1.12

Objective three sought to determine relationships, if any, between university student interest, awareness, and concern of water. The researchers determined overall means for the interest, awareness, and concern statements than ran a Pearson Product-Moment Correlation to determine relationships between students' overall interest, awareness, and concern of water. Table 4 presents the correlations between interest, awareness, and concern. Interest and awareness had a strong, positive correlation, $r = .61$, $p < .0001$. Interest and concern also had a strong, positive correlation, $r = .75$, $p < .0001$. There was a moderate, positive correlation between awareness and concern, $r = .50$, $p < .0001$.

Table 4

Relationships Between Current University of Arkansas Students' Interest, Awareness, and Concern of Water.

	Interest	Awareness	Concern
Interest	—	.61*	.75*
Awareness	.61*	—	.50*
Concern	.75*	.50*	—

Note. *$p < .0001$

Objective four sought to determine any relationships between students' class experiences, their interest in learning more about the AWRC, and their interest, awareness, and concern of water. Table 5 presents the correlations between students' class experiences, their interest in learning more about the AWRC, and their interest, awareness, and concern of water resources. The data showed a low, positive correlation between students who had taken a sustainability class and their interest in water, $r = .18$, $p < .0001$. There was also a low, positive correlation between students who had taken a sustainability class and their awareness about water, $r = .24$, $p < .0001$. Finally, there was a low, positive correlation between students who had taken a sustainability class and their concern about water, $r = .16$, $p = .0018$. There was a low, positive correlation between students who had taken a class that addressed water issues, water quality, or water resources and their interest in water, $r = .28$, $p < .0001$. There was also a low, positive correlation between students who had taken a class that addressed water issues, water quality, or water resources and their awareness about water, $r = .36$, $p < .0001$. Finally, there was a low, positive correlation between students who had taken a class that addressed water issues, water quality, or water resources and their concern about water, $r = .28$, $p < .0001$. Students were asked if they were interested in receiving more information from the AWRC and the researchers found there was a low, positive correlation between their interest in receiving more information and their interest in water $r = .44$, $p < .0001$. There was also a low, positive correlation between their interest in receiving more information and their awareness of water $r = .29$, $p < .0001$. Finally, the researchers found a low, positive correlation between their interest in receiving more information and their concern about water $r = .39$, $p < .0001$.

Table 5

Relationships Between Students' Class Experiences, Their Interest in Learning More About the AWRC, and Their Interest, Awareness, and Concern of Water.

Question	Interest	Awareness	Concern
Have you taken a sustainability class while attending the University of Arkansas?	.18**	.23*	.16***
Have you taken a class that addressed water issues, water quality, or water resources while attending the University of Arkansas?	.28*	.36*	.26*
Are you interested in receiving information about the AWRC?	.44*	.29*	.39*

Note. * $p < .0001$; ** $p = .0006$; *** $p = .0018$

Conclusions

This study assessed students' perceptions by asking their level of awareness, concern, and interest for a variety of water-related topics as well as their interest in the AWRC. The researchers found students were most aware ($M = 3.23$, $SD = 1.14$), concerned ($M = 4.07$, $SD = 0.86$), and interested ($M = 4.1$, $SD = 0.87$) in drinking water quality. Students who reported a high level of awareness about drinking water quality comprised 32.8% of respondents. Additionally, 53.5% of students reported having a high level of concern for drinking water quality. Finally, 48% of students reported a high level of interest in drinking water quality. As indicated by the mean score and percentage of responses, most students reported being uncertain about their level of awareness of drinking water quality, but they were highly concerned and interested.

Even though the Dale Bumpers College of Agriculture, Food and Life Sciences had the most students complete the survey (25.9%), the data shows students were least concerned with agricultural water quality needs ($M = 3.46$, $SD = 1.06$). However, 37.5% of students did report having a high level of concern for agricultural water quality needs with 25.2% being uncertain. Agricultural water needs should be addressed and included in any educational outreach initiative

because global food security for a rapidly increasing population depends on water available for agricultural uses (Hanjra & Qureshi, 2010; Oladele, 2012; Vörösmarty et al., 2010).

Students who participated in this study were least aware of the AWRC (M = 2.23, SD = 1.10) with 67.6% of students reporting either a low or very low level of awareness. Interestingly, on average students were uncertain about their level of interest in the AWRC (M = 3.15, SD = 1.18). However, 31.4% of students reported having a high level of interest in learning more about the AWRC while another 28.6% were uncertain about their level of interest in learning more. The data indicated that students were not aware of the AWRC, but had some interest in learning more.

Because the AWRC is highly involved in research activities, the instrument asked students awareness of water research and water research being conducted at the University of Arkansas. The study found 38.6% of students reported having a low level of knowledge of water research and 35.8% reported having a low level of knowledge of water research being conducted at the University of Arkansas. This further supports the low level of awareness students have about the AWRC. The researchers believe the data shows that the AWRC has an opportunity to create messages that improve students' knowledge of water research, especially research related to drinking water quality, while improving students' awareness of the AWRC. Needs assessments like the one conducted in this study, are essential for identifying learning opportunities (Barnard & Parker, 2012; Rice & Atkin, 2013).

In regards to relationships between current University of Arkansas students' interest, awareness, and concern of water, the data showed the strongest relationship between students' interest and concern. The researchers believe students who are interested in water would also be concerned about water issues and as their interest level rises, so may their concern. Interestingly

the relationship between students' awareness and concern was not as strong, but still students' awareness and concern had a moderate, positive relationship. Finally, students' interest and awareness also showed a direct positive relationship. It is important to note there were positive relationships between interest, awareness and concern, but we cannot determine if one causes the other or the scope of the relationship (McMillan & Schumacher, 2010). The researchers believe this is important because students who are interested also have some level of awareness and concern about the topic. On the opposite end of the spectrum, students who have less interest will have less concern and awareness. This idea could be factored into future communication strategies because it is reasonable to engage students with messaging, the messages need to be interesting in order to improve students' level of awareness and concern.

The data showed there were relationships between students' class experiences, their interest in learning more about the AWRC, and their interest, awareness, and concern of water. However, all of the positive correlations were low. Granted, the correlation between students' interest in water and their interest in receiving more information from the AWRC was highest and nearly moderate. It is important to note the correlations do not reveal the exact relationship between students' class experiences and their interest in learning more about the AWRC and their overall interest, awareness, and concern (McMillan & Schumacher, 2010). However, we can determine there is some kind of positive relationship (McMillan & Schumacher, 2010). Students who have had more exposure to natural resource education may be slightly more interest, aware and concerned. These same students may also have more of an interest in learning about the AWRC. Therefore, the AWRC can use this information to strategize messaging. This information reiterates the conclusions drawn earlier regarding the need for messages to be tailored to the audience's needs and interests (McQuail, 2005).

Overall, the means of the awareness questions indicate many students had low levels of awareness or were uncertain about their awareness level. Students, on average, reported their concern and interest in water between uncertain and high. While students may be uncertain about their awareness, they have some level of concern and interest for water. Which is consistent on a global scale because people are becoming more interested in policies regarding natural resources (Cox, 2013; Singletary & Daniels, 2004). Because they have some level of interest, an educational communication campaign has the opportunity to be successful in raising awareness.

Recommendations

Because the audience showed concern and interest through the results of this needs assessment study, drinking water quality should be a point of focus for the AWRC in future communication initiatives for students (Barnard & Parker, 2012; Rice & Atkin, 2013). The researchers recommend that the AWRC identify specific messages tailored to drinking water quality to better target the interests and concerns of students (Barnard & Parker, 2012; Rice & Atkin, 2013). The researchers also recommend future studies to identify various populations' interest, awareness, and concern for drinking water quality in order for organizations to develop targeted messaging that can improve international understanding of drinking water availability and associated issues.

The researchers recommend the AWRC first address other water issues, such as agricultural water quality needs and water research, as they relate to drinking water quality. Again, because drinking water quality was the topic most students were concerned about, using it strategically will better appeal to the audience (Barnard & Parker, 2012; McQuail, 2005). For example, the AWRC could create signs with facts and specific messages about water then hang

them at drinking fountains across campus. Additionally, the messages could be tailored to students who frequent the building. In an apparel studies building, the AWRC might use messages about how much water is used to create a particular item of clothing. In a building used primarily by animal science or poultry science majors, the center could use facts about animal water consumption. Another messaging strategy would be to increase awareness about drinking water issues locally, nationally, and internationally. The AWRC could put signs at drinking fountains with facts about how many people are without clean drinking water across the world, or even facts about the drinking water source in the area. People actively participate in their own learning and knowledge retention, so appealing to their interests can improve the effectiveness of the message (Doolittle & Camp, 1999; McQuail, 2005). If the AWRC decides to pursue an educational campaign targeting students, drinking water quality should be their focus and catalyst for information about other issues. They can use drinking water fountains physically as simply a prime location for catching someone's interest, and they can incorporate drinking water information into their campaign messages themselves.

The researchers recommend the AWRC use specific, educational messages tailored to raising awareness of the AWRC and its activities (Rice & Atkin, 2013). The AWRC should use the demographics reported in this study to define a specific audience of students in order to effectively disseminate future messages (Barnard & Parker, 2012; Guth & Marsh, 2006; Rice & Atkin, 2013). The data indicated 31.4% of students had a high level of interest in learning more about the AWRC. The 31.4% is their audience and they should try to reach these students directly. The AWRC should send representatives to speak with water and sustainability focused classes once per semester. They could also create a student technical advisory board to meet with their technical advisory board once a semester. This would provide feedback from students

who are interested in the AWRC's activities. These students could be recruited from water, sustainability, or even biological focused student clubs on campus. These students could then pass what they learn along to other interested students. The researchers believe this anecdotal look at water could have applications to other natural resource organizations, specifically water organizations. Future studies should focus on defining specific audiences among groups of people so that messaging is as effective as possible and global knowledge of water resources can be improved.

The researchers recommend that other water centers, academic institutions, and natural resource organizations perform campaign needs assessments to determine their audience demographics, learning opportunities, and potential barriers (Barnard & Parker, 2012; Rice & Atkin, 2013). Target audiences should be defined based on specific traits and demographics to improve the effectiveness of messages (Guth & Marsh, 2006; Marshall & Johnston, 2010; Rice & Atkin, 2013). Furthermore, an audience is really a group of individuals defined by their demographic and social similarities who consumes, shares, and actively participates in information transfer (Doolittle & Camp, 1999; McQuail, 2005). Thus, future research should focus on defining the audience groups who water centers and natural resource organizations need to target, while also determining the most appropriate messaging for each audience. Research on water is essential to develop sophisticated strategies for preserving and sustainably utilizing our most precious resource and global public and policy-maker understanding of water research is essential to improving water resource use (Doerfert, 2011; Hanjra & Qureshi, 2010). While this study assessed current students at the University of Arkansas, future studies should be conducted to assess demographics, learning opportunities, and potential barriers among a variety of types of people locally, nationally, and internationally.

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Appendices

Appendix A

Multiple Author Documentation

Department of
Agricultural Education, Communications
and Technology

June 30, 2014

To whom it may concern:

This letter should serve as verification that Ms. Tara L. Johnson has served as the primary author of the manuscript titled "Student Perceptions of the Arkansas Water Resources Center, Water Resources, and Water Issues." In this capacity she has contributed well over 51% of the work and is, therefore, listed as the primary author on the article.

Please let me know if you need additional information.

Sincerely,

Leslie D. Edgar, Associate Professor

CHAPTER V: A QUALITATIVE ASSESSMENT OF A LARGE SOUTHERN COMMODITY BOARD'S YOUTH OUTREACH PROMOTIONAL ACTIVITIES IN A 2012 MARKETING CAMPAIGN

A Qualitative Assessment of a Large Southern Commodity Board's Youth Outreach Promotional Activities in a 2012 Marketing Campaign

Tara Johnson, Amy Hughes, Leslie D. Edgar, Casandra K. Cox, and Jefferson D. Miller

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A Qualitative Assessment of a Large Southern Commodity Board's Youth Outreach Promotional Activities in a 2012 Public Relations Campaign

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Abstract

During the past few decades, agriculture has increased its promotional activities to improve understanding of specific commodities and educate audiences. Research analyzing promotional material is lacking in the agricultural industry. A team of agricultural communications researchers at the University of Arkansas utilized semiotic and content analyses to qualitatively assess the visual and content elements of a commodity group's promotional campaign. The purpose of this study was to analyze and assess the youth outreach portion of a communication campaign developed for a large commodity promotion board in a southern state. Each creative piece's content was systematically analyzed using content code sheets. Visually, content was coded denotatively, then connotatively to identify emergent themes. Textual content was coded for recurrent themes. This study identified emergent themes and determined message accuracy and quality of creative pieces. Findings revealed 24 emergent themes, with 234 theme occurrences, within 11 creative pieces used to target the "youth" audience, a message accuracy of 81.8%, and an overall quality score between "fair" and "average" (M = 2.21; SD = 0.61). The top five themes identified through the content analysis were: how [commodity] is produced (13.25%), benefits to Arkansas economy (10.26%), [commodity] is grown in Arkansas (9.83%), promotion of [commodity] Board (9.40%), and human benefits (6.84%). In-depth interviews with key players were used to support the researchers' analysis. Additional content analyses should be completed to determine themes, message accuracy, and quality of promotional materials from agricultural commodity campaigns to determine strengths and weaknesses within the industry.

Introduction

The landscape of modern agriculture is shifting as technology, the environment, and global economy continue to change (Doerfert, 2011). The purpose of the National Research Agenda (NRA) developed by the American Association for Agricultural Education was to identify the priority areas for research that would further the interests of modern agriculture (Doerfert, 2011). These key problem areas were divided into six priorities intended to inspire collaboration and research for the improvement of agriculture for 2011 through 2015. One of the priority areas for research needs identified in the NRA is improve public and policy maker understanding of agriculture and natural resources (Doerfert, 2011). Many commodity organizations have recognized the need for educational outreach and have become industry advocates, investing in campaigns to inform the public (Arkansas Soybean Promotion Board, n.d.; Beef Checkoff, 2013; California Milk Advisory Board, 2013; Cotton Incorporated, 2013).

Communication campaign design should begin with a needs assessment to identify learning opportunities, possible barriers, and potential outcomes (Barnard & Parker, 2012; Rice & Atkin, 2013). Organizations should also identify and target specific segments of a population rather than trying to reach broad audience groups (Guth & Marsh, 2006; Marshall & Johnston, 2010; Rice & Atkin, 2013). Basically, if audiences are specific on certain demographic characteristics, messages designed to meet the needs of those characteristics have increased effectiveness because they were tailored to the intended audience (Rice & Atkin, 2013). "Audience analysis is an ongoing, iterative process that informs you of the best ways to appeal to your audience, develop your influence and, when appropriate, change their behavior as your campaign story moves towards its conclusion" (Barnard & Parker, 2012, p. 77). An additional effect on the target audience is the quality of the influences created through the communications

or public relations campaign (Barnard & Parker, 2012). Every element of a creative product communicates with that product's audience, including design (Guth & Marsh, 2006). A high-quality creative product gives off a completely different, and more positive image, than a creative product of low quality (Guth & Marsh, 2006).

In the dynamic model of the public relations process, it is recommended that evaluation occur at each phase (Guth & Marsh, 2006). There are four phases in the model consisting of research, planning, communication, and evaluation. "Evaluation research cannot be an afterthought; practitioners are expected to articulate at the outset of any campaign how success is defined" (p. 208). Evaluation is needed to identify the strengths and weaknesses of communication campaigns (Telg & Irani, 2012). "With practitioners facing greater demands for accountability, every public relations plan must achieve an impact that is measurable" (Guth & Marsh, 2006, p. 208). Evaluation of communication campaigns helps the organization determine if the outcome or program was effective in achieving its goals and its efficiency (Rice & Atkin, 2013).

Theoretical Framework

Semiotics is a content-driven theory that discusses how people assign meanings to visual elements (Lester, 2011). "Recent use of semiotics theory has been noted in the field of mass communication. Semiotics [is used to] decode the meaning of a visual image through examination of signs" (Tolbert, 2009, p. 7). Semiotics, simply put, is the study of signs (Lester, 2011; Manghani, 2013). More specifically, semiotics is a theory of the production and interpretation of meaning based on images (Edgar & Rutherford, 2012). "The 'sign' is the most fundamental unit of mainstream semiology" (Rose, 2012, p. 113). According to semiotic theory, signs can take many different forms including words, images, sounds, gestures, and objects

(Chandler, 2002; Lester, 2011; Manghani, 2013; Rose, 2012). Signs are composed of two parts, signified and signifier (Manghani, 2013; Rose, 2012). The signified is an object or a concept while the signifier is the sound or image attached to the signified (Rose, 2012). Fundamentally, the sign is the representation of the signified (Rose, 2012).

Semiotics is a theory that is used to identify how people assign meaning to campaign materials, which is used to evaluate campaigns (Tolbert, 2009). Additional research shows that experiential learning activities are effective in reinforcing learning during youth outreach portions of campaigns. "Learning from experience is one of the most fundamental and natural means of learning available to everyone" (Beard & Wilson, 2006, p. 15). Therefore, interaction between the learner and the environment is a foundation of learning (Beard & Wilson, 2006; Kolb, 1984). Additionally, experiences do not simply go away at the end of a learning event or activity, each experience is reinforced, and perhaps modified, through further experiences that may influence the learner's attitudes (Dewey, 1938). This forms the basis of the Experiential Learning Theory, which can be further explained as the process by which knowledge is created through experience (Kolb, 1984). One effect that can impact experiential learning either positively or negatively is the participant's attitudinal position about the event or experience (Beard & Wilson, 2006). Another factor influencing the success of an experiential learning activity or event is if participants perceived the event as being of high quality (Dewey, 1938).

Experiential learning is further supported by and aligned with constructivist theory in that both postulate that an individual's experiences shape how they interpret meaning (Roberts, 2006). Doolittle and Camp (1999) noted the most important element of constructivism was that learners create their own meaning based on past experiences. Additionally, constructivist theory describes how the development of knowledge is not done passively, but rather actively through

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an individual's cognition (Doolittle & Camp, 1999). In other words, the learners, in this case, members of the youth audience, are active members in the learning process. With this in mind, it is important for those who develop educational initiatives to research and gain insight into what their audience already knows to achieve a more sophisticated level of understanding (Hess & Trexler, 2011b).

The need for this study was supported by the NRA research priority area focused on public and policy maker understanding of agriculture and natural resources (Doerfert, 2011). Within that priority, the NRA defined a need to increase understanding of the effectiveness of messaging and educational programs within agriculture. As students become further removed from the farm, outlets that provide agricultural knowledge or increase agricultural literacy are imperative (Reidel, Wilson, Flowers, & Moore, 2007). Agricultural literacy can be defined as a person's ability to understand the agricultural industry and its significance economically, socially, and environmentally and be able to communicate those significances with others (Hess & Trexler, 2011a; Reidel et al., 2007; Pense, Beebe, Leising, Wakefield, & Steffen, 2006). The goal of the researchers in this study was to determine the effectiveness and quality of the youth outreach portion in statewide communication campaign about a particular southern commodity. To do this, researchers at the University of Arkansas examined the messaging, target audience reach, effectiveness, and visual elements of the campaign using semiotic theory and content analysis to drive the qualitative assessment.

Purpose and Objectives

The purpose of this study was to analyze and assess the youth outreach portion of a public relations campaign developed for a large commodity promotion board in a southern state. The semiotic analysis of the creative materials within the campaign was necessary to create a

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precise account of the intended messages portrayed to the targeted youth audience and determine if meanings behind those messages were audience appropriate. The study was guided by the following objectives:

1) Determine the effectiveness of content in the youth outreach portion of a large, southern commodity board's promotional communication campaign.

2) Complete a content analysis of creative pieces targeted at youth and identify any emergent themes.

3) Determine the accuracy of outlined and implied messages for each creative piece.

4) Assess the quality of creative works used in the campaign's youth outreach.

5) Determine the opinions of key players who assisted with event recruitment using in-depth interviews.

Methods and Procedures

A large southern commodity promotion board hired a full-service, local, regional, and national marketing, advertising, and public relations firm to develop a mass media public relations campaign to promote the commodity. Per the agreement reached by the two parties, the firm was tasked to supply the commodity promotion board with the following core campaign deliverables in 2012 to directly meet the needs of the youth (ages 12-18 as outlined by the public relations firm who developed the promotional material) target audience: (a) website, (b) educational video, and (c) a presence at various statewide events with an educational booth and supporting materials. A team of agricultural communications researchers at the University of Arkansas utilized semiotic analysis to qualitatively assess the visual and content elements of the commodity group's campaign. "Qualitative data analysis is primarily an inductive process of organizing data into categories and identifying patterns and relationships among the categories"

(McMillan & Schumacher, 2010, p. 367). The researchers in this study used inductive analysis to synthesize and make meaning from the data in the campaign deliverables by identifying categories and patterns (McMillan & Schumacher, 2010).

All creative pieces produced by the public relations firm in 2012 for the youth target audience were evaluated in a systematic, content driven approach to assess the potential impact on perceptions of individuals (Edgar & Rutherford, 2012). Eleven creative pieces were coded for emergent themes then were evaluated for quality according to accepted professional standards, and, finally, a perceived message for each piece was derived. A database of emergent themes was developed during analysis of the promotional pieces created in the commodity campaign and used to target youth. The implied message was compared with identified message listed by the full-service public relations firm for each creative piece.

The researchers first developed code sheets to guide the coding process. The researchers created print, visual, video, and quality code sheets based on industry standards. The print code sheet was used to analyze the creative materials containing mostly copy (e.g., print advertisements and news releases) and transcriptions of videos that were a part of the campaign. Again, because the process of analyzing content is systematic and replicable (Edgar & Rutherford, 2012) a code sheet was used to guide the process and words were compressed into categories based on the specific coding rules in this technique (Weber, 1990).

There were 24 emergent themes, with 234 theme occurrences, identified in promotional pieces used to target the youth group. Themes were derived from visual and content analysis. Following Lincoln and Guba's (1985) constant comparative method, words and passages were coded in their original context (Creswell, 1998), and key themes emerged that characterized the creative pieces and there corresponding intended messages used to target youth. Throughout the

coding process new themes were added as necessary and at the end of the processes themes were compressed where needed. Credibility of the findings was achieved through content code sheets, member checking, and the use of expert interviews of individuals involved with student recruited for commodity-based educational events. Trustworthiness and dependability were established through purposive sampling, the use of thick description, and the use of an audit trail supporting key findings.

Visual coding sheets were used for creative materials that had a visual element. The visual materials were analyzed denotatively: the contents of the images were deconstructed and researchers listed key words based on what they immediately saw when looking at the image. Next, the objects in the photo were analyzed for connotations, and the associative value of the photos was assessed (Edgar & Rutherford, 2012). "For example, an image of a tropical island would have a basic denotative reading of a tropical location, and a possible connotative reading of a vacation or relaxation and slow living" (Rhodes, 2008, p. 36). This approach created a careful and precise account of how the meanings within images from the campaign are perceived (Rose, 2012). Similarly, the video coding sheet guided the researchers through identifying the denotative and connotative values of the visuals used in each video. Video transcriptions were also coded, as mentioned above, to identify emergent themes.

During content analysis, the researchers analyzed text to identify key words in context (Gall, Gall, & Borg, 2006; Weber, 1990). From the key words in context, emergent themes were identified and compressed (Gall et al., 2006). After completing the content analysis, the identified recurring, emergent themes (Gall et al., 2006; Lincoln & Guba, 1985) were used to ascertain the implied message in each piece. Once the implied message was identified, it was compared with the intended message identified by the public relations firm in its original

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campaign plan. In the comparison, the researchers assessed if the intended message corresponded with the perceived message. If the perceived message and the intended message were cohesive, it was determined the piece had accurate messaging. If the perceived message and the intended message were not cohesive, it was determined the piece's messaging was inaccurate. Some creative pieces did not have an identified intended message in the original campaign plan; in that case the message accuracy was inconclusive.

Quality coding sheets were developed and used by the researchers to evaluate the quality of each individual creative piece. Two quality sheets were used. The first sheet had sections for images, design elements, and video techniques. The image section required researchers to identify image composition used. Next, the design elements section required the researcher to identify design composition used in the creative piece being analyzed. Finally, the video portion of the first coding sheet required researchers to identify the types of shots used and take an inventory of the visuals. Overall, the goal of the first coding sheet was to establish a frame of reference for the second quality code sheet. The second quality code sheet was developed as a way for the researchers to assign a numerical rating to the quality of the piece. The copy, images, design, video, and/or audio elements of each piece were ranked on a 5-point Likert-type scale from 1 (poor quality) to 5 (excellent quality). Quality characteristics were determined by accepted professional journalist and print standards. Telg and Irani (2012) noted the Associated Press is the accepted writing style every journalist and public relations professional should use. Image quality was based on the use of accepted professional photography principles including focus, angles, rule of thirds, lines, and/or depth of field. For design elements, common design principles were used to judging each creative piece including: balance, proportion, order, contrast, similarity, and unity. Finally, video quality was determined by the use of video shot

composition, content, video quality (Telg & Irani, 2012). Then, through statistical analysis the researchers determined the mean and standard deviation of the quality ratings for each piece, leading to an overall quality rating for each public relations piece developed to target youth.

Before proceeding with the content evaluation of the campaign, two researchers independently assessed four creative pieces: (a) print ad, (b) logo, (c) press release, and (d) event signage. Then the researchers compared their individual analyses and measured their inter-coder reliability in the form of percent agreement. This process was repeated until the researchers consistently averaged above 70% of interpretations in agreement. A high percentage of agreement (70% or higher) among researchers during data collection proves the reliability of the coding process (McMillan & Schumacher, 2010). Once agreement among the researchers reached an acceptable percentage, each creative piece for the youth audience was coded independently. Again, agreement was assessed. Researchers maintained an average of 87.52% agreement when coding the promotional materials used to target the youth audience group. Agreement was established by evaluating how often two or more researchers agree on what they have analyzed (McMillan & Schumacher, 2010). Usually there is a level of consensus between qualitative researchers, but, often, the way the researchers individually identify themes is different (Armstrong, Gosling, Weinman & Marteau, 1997). The researchers in this study originally identified similar themes in different ways, but after discussion and repeating their analyses, agreement, and like-mindedness was reached. Ultimately, because the researchers found a high level of agreement consistency in evaluation was established (McMillan & Schumacher, 2010). Last, the use of multiple researchers during the data collection and analysis process enhanced the design validity of the study (McMillan & Schumacher, 2010). A panel of faculty advisors consisting of two agricultural communications professors and one agricultural

communications instructor oversaw this process as suggested by McMillan and Schumacher (2010) to ensure study validity.

Quality and effectiveness of the campaign's events were assessed by performing a content analysis on teaching and learning materials produced for the commodity board's youth outreach events. Researchers supplemented content evaluation of the youth outreach portion of the campaign with in-depth interviews of key players involved in the implementation of the youth events. In-depth interviews can be defined as a set of questions posed by a trained interviewer to a key audience member to gather information on what the subject knows about a certain topic (Burns & Bush, 2006). Two key players were interviewed to gain insight and feedback into FFA and 4-H member involvement in the 2012 [commodity education event] at the [celebrity endorser's] farm. The interviews were conducted over the phone by the researcher. A questioning guide was developed by the panel of experts and was used for both interviews. Interviews were recorded and transcribed. A thematic analysis was performed on the interview transcripts, using open and axial coding methodology (Lincoln & Guba, 1985; Strauss & Corbin, 1998) in which general themes were identified (open coding) and further refined through deeper examination into more specific themes (axial coding).

The interview data was used to determine key player perceptions of the strengths and weakness of the events used to target youth in the promotional campaign. "The objective is to obtain unrestricted comments or opinions and to ask questions that will help the marketing researcher better understand the various dimensions of these opinions as well as the reasons for them" (Burns & Bush, 2006, p. 221). The researchers used the in-depth interviews to gain necessary, personal feedback about the youth outreach component of the communication campaign. Responses from in-depth interviews can be more revealing than those in a structured

survey and, thus, can be an advantage to the overall evaluation of a campaign by providing

actual, unrestricted input from a key person (Burns & Bush, 2006).

Findings and Results

Content Analysis of Creative Materials

The top five emergent themes identified through the content analysis were how

[commodity] is produced (13.25%), benefits to Arkansas economy (10.26%), [commodity] is

grown in the Arkansas (9.83%), promotion of [commodity] Board (9.40%), and human benefits

(6.84%). The remaining emergent themes, with corresponding frequencies, are noted in Table 1.

Table 1

Emergent Themes Identified in the Youth Creative Pieces

Content and Visual Themes	*n*	*%*
How [commodity] is produced	31	13.25
Benefits to Arkansas economy	24	10.26
[Commodity] is grown in Arkansas	23	9.83
Promotion of [commodity] Board	22	9.40
Human benefits	16	6.84
For use in animal feed products	13	5.56
General benefits to Arkansas	12	5.13
Diversity of [commodity]	11	4.70
Value of educating about [commodity]	9	3.85
[Commodity] contributes to Arkansas agriculture	8	3.42
For use in energy products	8	3.42
[Commodity] is natural	7	2.99
[Commodity] is environmentally sustainable	7	2.99
Research is valuable to production	6	2.56
Partnerships are important	6	2.56
Celebrity endorsements	4	1.71
[Commodity] contributes to animal agriculture	4	1.71
Economic value to consumers	4	1.71
For use in common household products	4	1.71
Promotion/Use of slogan	4	1.71
[Commodity] is healthy	3	1.28
For use in industrial products	3	1.28

Table 1 (continued)

Content and Visual Themes	n	%
[Board] values post-secondary education	3	1.28
For use in food products	2	0.85
Total	234	100.00

Message Accuracy of Creative Pieces

Researchers identified a perceived message for each promotional piece developed in the

campaign. Those perceived messages were compared to the intended message outlined by the

[public relations firm]. Table 2 shows the percent of message accuracy for all creative pieces.

Table 2

Message Accuracy Based on Outlined Message as Compared to the Intended Message for the Youth Audience (N = 11)(accounted for 9% of total budget allocation for the [commodity] promotional campaign)

	n	%
Accurate	9	81.8
Inconclusive	0	0.00
Inaccurate	2	18.2
Total	11	100

Note. Inconclusive indicates no intended message outlined in the original campaign plan for comparison.

Creative Piece Quality Assessment

Each creative piece was assessed for quality and after averaging the scores for the 11

promotional pieces intended for the youth target audience, the researchers found the overall

mean quality score to be 2.21 (*SD* = .61). Table 3 shows means and standard deviations for the

five quality areas used to assess the promotional pieces used to target youth.

Table 3

Overall Quality of Creative Pieces for the Youth Audience

Categories of Quality Measures	M	SD
Copy	2.08	0.69
Images	2.83	0.26
Design	2.05	0.87

Table 3 (continued)

Categories of Quality Measures	*M*	*SD*
Video	1.75	0.5
Audio	2.33	0.88
Total	2.21	0.61

Note. Likert scale used: 1 = poor, 2 = fair, 3 = average, 4 = very good, and 5 = excellent. Not all quality categories were represented in each creative piece.

In-depth Interviews with Key Players

After the in-depth interviews were recorded and transcribed, the following findings were discovered through a content analysis: (a) Youth were recruited by the key players with assistance from agricultural science teachers and extension agents close in proximately to [celebrity endorser's] farm; (b) Approximately 25 FFA (ages 13-18 years) and 20 4-H members (ages 8-18 years) attended the event. Most attendees were Caucasian with the two African American youth; (c) Youth generally enjoyed attending the 2012 [commodity education event], but were unclear prior to the event that it would be focused on [commodity] and [commodity] promotion in the state. Generally youth were unaware of who [celebrity endorser] was prior to the event; (d) Learning objectives for the event seemed unclear. However, general information about [commodity] use was covered, but instruction to increase youth's awareness about career opportunities available in agriculture was lacking; (e) Youth involvement was not supported financially. FFA, 4-H, and/or parents of youth attending the event covered costs associated with travel and meals.

One key player was interviewed to determine the level of youth involvement in the Arkansas State Fair Ag in Action booth and to identify training used to prepare youth to effectively manage the booth. The following initial findings were discovered: (a) The Arkansas FFA State Office handled the recruitment and scheduling of youth assisting with the Ag in Action booth; (b) Each day, before the fair opened, youth were asked to volunteer to work the

[commodity] booth during that day (2 to 5 students daily staffed the booth); (c) No formal training program was in place to train youth on how to answer questions specific to [commodity] in Arkansas. "[Person's name], from [public relations firm], would train the youth each morning in a 15 to 30 minute overview of the different aspects of what the booth had, where the different information was located to give out, also a little bit about what the [commodity] Board in Arkansas does and provided some information about [commodity] and also how to run the interactive computer game there"; (d) There was little [public relations firm] involvement daily at the Ag in Action booth. "Personnel from [public relations firm] would stop by once or twice per day to check on the booth and take photos"; (e) An iPad was donated by [public relations firm] to be given away to one youth as an incentive for FFA member's participation; (f) Print and promotional materials and an interactive game were available at the Ag in Action booth; and (g) Youth attending the event enjoyed the interactive game most.

Conclusions and Recommendations

Using semiotic theory to guide the coding of each creative piece, the emergent themes and theme occurrences were identified. It is important to consider if the following major themes were the most appropriate for youth and the goals of the campaign: how [commodity] is produced (13.25%), benefits to Arkansas economy (10.26%), [commodity] is grown in Arkansas (9.83%), promotion of [commodity] Board (9.40%), and human benefits (6.84%). Many of the messages outlined by [public relations firm] focused on promoting awareness of [commodity].

It was difficult to assess the appropriateness of the emergent themes identified in the research because the [commodity] campaign materials did not identify a specific audience segment of Arkansas' youth. As mentioned above, the campaign outlined that youth were between the ages of 12 and 18 would be targeted. However, this was not a specific enough

audience segment, because demographic traits of 12 to 18 year olds across Arkansas vary greatly. Therefore, public relation campaigns should utilize messages that are tailored to specific, narrow audience demographic (or other) traits in order to increase effectiveness (Rice & Atkin, 2013). The researchers recommend that groups planning promotional campaigns identify specific audience groups and use a needs assessment to aid in identifying appropriate messaging (Barnard & Parker, 2012; Rice & Atkin, 2013).

As evidenced through this study, 24 emergent themes, with 234 theme occurrences, diluted the message impact from the only 11 creative pieces used to target the diverse youth audience. Evaluation is a critical step, which should be ongoing throughout a communication campaign (Guth & Marsh, 2006). Practitioners should evaluate each creative piece and determine if its messaging is appropriate, concise, and effective (Rice & Atkin, 2013). Additionally, audience analysis should be continued throughout the duration of the campaign to help evaluate the effectiveness of the materials produced (Barnard & Parker, 2012). In the future, the researchers recommend that commodity boards request campaign evaluations throughout the duration of the campaign to maintain accountability, incorporate the involvement of a commodity specialist to ensure accuracy of information, and identify a gatekeeper to approve creative materials developed by an outside communications firm.

It is important to note that some creative pieces were particularly unsuccessful at communicating their intended messages due to a lack of audience engagement. Research shows that interaction between the audience member and their environment is an important aspect of the learning process (Beard & Wilson, 2006; Kolb, 1984). A series of signs and short videos were created for the campaign to promote awareness of [commodity] facts. The signs were used with the promotional booth that was set up at various events to target youth. Their purpose was

to direct viewers to the online videos. The linked videos each had less than 15 views at the beginning of this evaluation. This provides evidence of a clear lack of engagement among the target audience. The low-quality experiences with creative materials stay with and, perhaps, reinforce an individual's opinions, especially if further experiences are of similar quality (Dewey, 1938). Similar initiatives, used to target audience segments, should tested by audience members to determine potential interest, engagement, and impact by other members from the audience group.

Findings from this study indicated that there was an 81.8% message accuracy of promotional pieces developed to support the campaign. However, the outlined messages were broad and general. The promotional pieces may have impacted more youth with a targeted, specific message reinforced by experiential learning experiences. Experiential learning activities leave participants with experiences that live through further experiences and continue to influence the attitudes of the participant (Dewey, 1938; Doolittle & Camp, 1999: Kolb, 1984; Roberts, 2006). These activities and messages should be specialized for a specific segment of the target population (Guth & Marsh, 2006; Marshall & Johnston, 2010; Rice & Atkin, 2013). Each member of a target audience has unique experiences that effect how they construct meaning, which further supports the need for segmented audiences with specific traits (Roberts, 2006). So although there were creative pieces used to target youth and experiential learning experiences for youth at [celebrity farm], these items were not used to reinforce and support each other. This should be corrected in the future to increase campaign impact and depth.

As a result of this campaign evaluation, the researchers believe it is important for groups targeting youth to identify precise messages reinforced by experiential learning activities for specific groups of youth that do not have prior agricultural knowledge. These groups should

utilize constructivist concepts and perform a needs assessment to gain an understanding of what

youth already know about the topic (commodity) they are promoting. Again, because prior

experiences shape learning, the active role a participant plays in an experiential learning activity

should be included during development. Further research should be completed to determine the

effect experiential youth outreach from agricultural companies or commodity boards have on

learning and knowledge retention.

The overall quality of all of the pieces that were assessed had a mean of 2.21 ($SD = 0.61$)

where each piece was ranked on a 5-point Likert-type scale from 1 (poor quality) to 5 (excellent

quality). A mean at this level places the quality of creative pieces in the campaign between fair

and average. Because the creative materials were assessed based on industry standard measures

for quality, a low score is indicative of low quality. Therefore, the researchers were not satisfied

with the quality of the pieces in the campaign being fair to average. "When a document is well

designed, readers understand the information more quickly and easily. Readers feel more

positive about the topic and more accepting of its message" (Telg & Irani, 2012, p. 99). Efforts

should be made to increase the overall quality of creative materials used to target youth in this

campaign. Moreover, additional content analysis should be completed to determine the themes,

message accuracy, and quality of creative pieces from other agricultural campaigns to determine

strengths and weaknesses within the industry.

Content analysis research is supported by the NRA research priority area focused on

public and policy maker understanding of agriculture and natural resources (Doerfert, 2011).

Because American citizens are becoming further removed from the farm, promotional

communication campaigns are of upmost importance in increasing agricultural literacy (Reidel et

al., 2007). The researchers also recommend that other researchers doing campaign evaluation

studies include quality measures in the evaluation process. Further research should be conducted

to provide general insight on the effect quality has on audience perceptions, especially with

commodity groups' audiences. Determining how quality affects an audience will provide more

insight and understanding into what makes a successful educational program that informs various

publics about agriculture and increase agricultural literacy, thus furthering the mission of the

NRA priority area. Also, communication firms working on agricultural-based campaigns must

have an agricultural expert on staff. To communicate about agriculture one needs a background

and experience in agriculture and communications.

Additionally, the key players that [public relations firm] asked to recruit 4-H and FFA

students, mentioned that participants in the education program were not provided a meal and had

to make arrangements for the all-day event. The interviewees felt there were more appropriate

ways to target youth about commodity promotion. Alternative messages and activities should be

updated to better target youth. Only approximately 45 students from a localized area participated

in the learning event at [celebrity endorser's] farm. The key players felt the event should have

allowed for the participation of more youth. They also thought that there might be another, more

cost effective, instructional alternative to educate youth about the Arkansas commodity and

careers in agriculture through direct funding to 4-H/FFA to provide instruction for more students.

Additionally, creative pieces used to target youth did not include celebrity endorsement

information. Therefore, is this really the correct location and celebrity connection for the youth

target audience? Also, there may be a better more appropriate method to target youth.

Additional efforts should be focused on targeting youth outside the 4-H and FFA programs.

The researchers recommend that other commodity groups targeting youth utilize in-depth

interviews with key players. Feedback from those helping with the events gave the researchers

an inside look at the campaign they were tasked to evaluate. It would also be beneficial to pre-test and post-test youth participants in the experiential learning events to determine the impact of the curriculum used. Without gathering immediate feedback from students, their knowledge retention, increase of agricultural literacy, and overall impression of the [commodity] after the experiential learning event are unknown. Finally, commodity groups should develop programming that targets the largest possible number of their youth audience members. Targeting a larger number of students would yield higher audience saturation and, therefore, impact. Additionally, specific curriculum should be developed for programs targeting youth.

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Appendices

Appendix A

Multiple Author Documentation

Department of
Agricultural Education, Communications
and Technology

June 30, 2014

To whom it may concern:

This letter should serve as verification that Ms. Tara L. Johnson has served as the primary author of the manuscript titled "A Qualitative Assessment of a Large Southern Commodity Board's Youth Outreach Promotional Activities in a 2012 Marketing Campaign." In this capacity she has contributed well over 51% of the work and is, therefore, listed as the primary author the article.

Please let me know if you need additional information.

Sincerely,

Leslie D. Edgar, Associate Professor

CHAPTER VI: CONCLUSION

The two articles presented in this thesis delved into two distinct stages of communication campaigns: research and evaluation. Both stages are critical in important to a successful campaign (Barnard & Parker, 2012; Guth & Marsh, 2006; Rice & Atkin, 2013). A needs assessment is an essential element of campaign design (Barnard & Parker, 2012; Rice & Atkin, 2013). The needs assessment helps the campaign creators determine specific audience groups and messaging strategies to appeal to that specific, targeted audience in the most effective way (Barnard & Parker, 2012; McQuail, 2005). Evaluation is an extremely important stage that should be completed throughout the campaign process (formative) as well as at the end of the campaign (summative) (Guth & Marsh, 2006). When performed at the end of a campaign, evaluation determines how efficient and effective the campaign in targeting the identified audience (Guth & Marsh, 2006; Telg & Irani, 2012). Thus, though the explicit subject of the two articles outlined in this thesis was different, they were united overall by the dynamic public relations process (see Figure 1-1) (Guth & Marsh, 2006).

In the first article, researchers performed a needs assessment of current University of Arkansas students for the Arkansas Water Resources Center (AWRC). Students ($n = 440$) filled out a 45-item questionnaire to determine their perceptions of the AWRC, water resources, and water issues. The researchers found that students were most aware, concerned, and interested in drinking water quality, but were least aware of the AWRC. Additionally, there were significant relationships between students overall interest, awareness, and concern of water. The results of this study can be examined further in the article, but they indicate a need for more organizations to perform needs assessments of their audiences. The researchers also recommend that the

results from this study, and future studies, be used to improve messaging strategies used by natural resource (specifically water focused) organizations.

In the second article, the researchers performed a qualitative analysis of an existing communication campaign to evaluate its visual and content elements. The researchers used semiotic and content analysis to systematically analyze each of the 11 creative pieces from the campaign. They then identified emergent themes, derived messages from the themes, and compared the implied messages to the intended messages in order to determine message accuracy. The results indicated though there was an average message accuracy of 81.8%, the number of theme occurrences in the creative pieces diluted messaging. Additionally, the overall quality of the creative pieces was between "fair" and "average." The results of this study indicate a need for additional content analyses of existing communication campaigns. These types of content analyses determine themes, message accuracy, and quality as well as strengths, weaknesses, and opportunities for improvement.

Overall, results from the two articles indicated that more research should be done with communication campaigns. The researchers used the dynamic public relations process as a guide for connecting the two studies and it should be used in future examinations. The dynamic public relations process is a four step process for campaigns consisting of research, planning, communication, and then evaluation like the traditional model of the public relations process. However, in the dynamic process each step can be performed at any time in the process (Guth & Marsh, 2006). For example, evaluation can, and should, occur after each stage (Guth & Marsh). This process is dynamic, but also iterative and more work should be done in researching best practices, especially within the agriculture industry which tends to lag behind other industries in

communications initiatives. The industry will always have a need to communicate with its audiences, thus communication research will always have a place in the field.

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