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Ricky Telg
University of Florida

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Abstract

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The Journal of Applied Communications

Editor's Note:

The manuscripts in this issue of JAC were presented at the 2011 Association for Communication Excellence Conference in Englewood, Colorado. This is the first issue of JAC that features articles from our professional meeting. These papers all went through an additional layer of expedited peer-review before being accepted for publication in the Journal.

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The *Journal of Applied Communications* is:

- Focused specifically on issues and topics relevant to agricultural and applied communication professionals.
- Peer-reviewed to ensure accuracy and quality.
- Indexed selectively in AGRICOLA; listed in Ulrich's International Periodicals Directory and ARL's Directory of Scholarly Electronic Journals and Academic Discussion Lists.

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Every article (not reviews) must contain an abstract of no more than 250 words. If applicable, briefly list the purpose, methodology, population, major results, and conclusions. Begin the manuscript text as page 1. Use appropriate subheads to break up the body of the text. List footnotes and literature citations on separate pages at the end of the text along with tables or figures, if used. Indicate in margins of the text, approximately, where tables/figures should appear. Include three to five keywords to describe the content of your article. Text for research articles, such headings as Introduction, Methods, Results and Discussion would be appropriate.

For literature citations, follow the style guidelines in the Publication Manual of the American Psychological Association (Sixth Edition). Within a paragraph, omit the year in subsequent references as long as the study cannot be confused with other studies cited in the article.

When statistical information is reported in an article, the author should contact the lead editor for special guidelines.

ACE Mission

ACE develops professional skills of its members to extend knowledge about agriculture, natural resources, and life and human sciences to people worldwide.

ACE Headquarters

Holly Young, Interim Executive Director
59 College Road, Taylor Hall
Durham, NH 03824
(855) 657-9544
ace.info@unh.edu

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- Acknowledgement of any funding source.
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Research

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Research

Perceptions of Agricultural Communications Freshmen Regarding Curriculum Expectations and Career Aspirations

Tamra Watson and J. Tanner Robertson

Abstract

The purpose of this study was to describe agricultural communications freshmen perceptions of agricultural communications curriculum by describing selected personal characteristics, curriculum expectations and career aspirations of agricultural communications freshmen at Oklahoma State University, Texas Tech University and Texas A&M University. This study also described agricultural communications freshmen's interests and perceived importance of agricultural communications skills at the selected institutions. The population for the study was 100 agricultural communications freshmen enrolled in an entry-level agricultural communications course during the 2010 Fall Semester. To assess the perceptions of the population, a 54-question instrument was developed and sent to each University and administered on site. Data was collected from each site using scantron sheets and was analyzed using descriptive statistics.

Keywords

curriculum, freshmen, perceptions, aspirations

Introduction

History has taught man one of the simplest ways to raise awareness of an issue, problem, or crisis is to talk about it to communicate. Communication is a 13-letter word used to define the "process through which messages, both intentional and unintentional, create meaning" (Baldwin, Perry, & Moffitt, 2004, p. 5). More specifically, scientific communicators — employed as editors, journalists, broadcasters, public relations representatives, web designers, and photographers — have the responsibility to stand in the "critical intersection of the practice of science and the public understanding of science" (Treise & Weigold, 2002, p. 320). Communication is perhaps the only way people can learn and understand the complexity of scientific developments (Treise & Weigold). "For most people, the reality of science is what they read in the press. They understand science less through direct experience or past education, than through the filter of journalistic language and imagery" (Nelkin, 1995, p. 2).

While scientific communicators believe their work is important, Treise and Gold (2002) stated scholars believe the process is executed poorly. Part of this poor execution is attributed to a lack of education, both in science and communication (Treise & Weigold). Palen (1994) argued most

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journalism graduates are not educated about scientific issues in their basic communications courses.

The unique education of scientific communicators has been important to agriculturists for more than a century. As early as 1905, agricultural journalism was taught at the university level to train writers for the agricultural press (Burnett & Tucker, 2001). By 1908, the first department of agricultural journalism was established in Madison, Wisconsin. Through time, the academic discipline evolved to introduce more strategic communications concepts such as public relations, marketing and advertising (Simon, Robertson, & Doerfert, 2003). With the broader skill set, the name "agricultural communications" was selected around 1970 to represent the academic discipline (Simon, Robertson, & Doerfert). Today, the industry depends on trained agricultural communicators from more than 25 different programs to inform the public about complex agricultural issues such as food safety, environmental conservation, and the scientific practices involved in agricultural production (Burnett & Tucker, 2001; Reisner, 1990). More importantly, the industry depends on talented agricultural communicators to present scientific information to a diverse audience in interesting and entertaining ways (Buck & Barrick, 1995). Doerfert and Miller (2006) claimed individuals in the agricultural industry will look to agricultural communicators to lead them through great changes of knowledge management. Hence, a great need exists to educate and train such professionals.

In 2007, agricultural communications curriculum evaluation was described as the No. 4 priority by the National Research Agenda of the American Association for Agricultural Education (Osborne, 2007). Researchers claimed curriculum development and evaluation is necessary to keep up with industry trends, issues and problems (Doerfert & Miller, 2006; Morgan, 2008; Simon, Robertson & Doerfert, 2003; Sprecker & Rudd, 1998; Terry, 1996). However, the industry's needs are only one of three measurements used in curriculum development and evaluation. To be considered effective, any curriculum must balance student interest with faculty vision and industry need (Coffey, 1987).

Of the three categories, students are the major force in the shaping and molding of curriculum content (Finch & Crunkilton, 1999). Thus, student characteristics, skills, interests, expectations, and maturity level should receive close scrutiny when selecting content for a curriculum (Finch & Crunkilton). Therefore, any efforts to alter curriculum should be made for student benefit and not the economy (Beyer & Liston, 1996). However, the majority of agricultural communications curriculum studies have been written from the industry need perspective (Doerfert & Miller, 2006; Morgan, 2008; Sprecker & Rudd, 1997, 1998). Few studies have been published about the expectations or characteristics of agricultural communications students (Tucker & Paulson, 1988). Taking such a view, may have the danger to reduce a student to an abstract form of a cerebral statistic, instead of individual thinking, responsive and physical human being (Beyer & Liston). Hence, Myers (2005) urged educators to "not relinquish the power found in designing curriculum to those who do not intimately know the students" (p. 25). Students should be invited continually to share their opinion regarding what is taught in their classroom (Myers).

Theoretical framework: Expectancy-Value theory

In 1995, Sullins, Hernandez, Fuller, and Tashiro used the expectancy-value theory as a theoretical framework to understand students' choice to major in a scientific discipline. The theory, outlined by Atkinson (1964), claims a person's motive to engage and achieve a task is constructed from his or her expectations and values. *Expectancy* is defined as the likelihood of a success weighed against an individual's past experiences; while *value* is viewed as the reasons or potential rewards behind engaging in the task (Schunk & Pajares, 2005). The usefulness of the expectancy-value theory has been well established and applied in diverse settings (Spence & Helmreich, 1983).

To understand students' choices and interests in science or agricultural communications, one must understand the expectations a student holds that directly influence his/her achievement choices (Wigfield & Eccles, 2000). A student's expectancy is shaped by past experiences in cultural and self-perceived concepts. These different experiences lead the student to make some type of judgment about the probability of success in a particular behavior (Franken, 2007). For example, a student may believe if he/she engages in education, he/she may expect to receive a higher salary, status, privilege, or prestige (Spence & Helmreich, 1983). Because past experience directly influences behavior, the assessment of agricultural and communications experiences of agricultural communications freshmen has the potential to reveal information that shapes their ability belief — the probability in which they can succeed in a given task (Wigfield & Eccles, 2000). Hence, curriculum developers could be one step closer in understanding why students choose to major in agricultural communications.

However, expectancy is not considered motivational alone; rather it must be coupled with value to provide sufficient incentive to engage in the task (Franken, 2007). Wigfield and Eccles (1992) claimed research dedicated to understanding an individual's incentive value has been neglected. Eccles et al. (1983) identified three types of incentive values: attainment value, intrinsic value and utility value. Attainment value is the importance of performing well in the desirable task. It helps to reinforce valued characteristics such as masculinity/femininity or competence. On the other hand accomplishing a task may offer an environment to fulfill achievement, power or social needs. Intrinsic value is considered the level of interest one has for engaging in a task. People motivated by intrinsic value seek immediate enjoyment from task engagement (Wigfield & Eccles, 2000). Utility value, on the other hand, is the level of importance an individual assigns to the task. A student may choose to enroll in a course because of its utility value or importance in helping him/her achieve a goal (i.e., a job or graduation) even though a specific class holds no interest value for a student (Eccles et al., 1983). In this case, the value a student places in a specified career outweighs the negative attitude toward the subject matter. Whatever the driving motivation, parents and teachers are encouraged to help students participate in activities they naturally enjoy (Eccles et al). In addition, keeping students within their fields of natural interest may have the potential to increase student retention with a degree. Sullins, Hernandez, Fuller, and Tashiro (1995) found that expectancy-values were a significant factor in distinguishing one major from another.

Student characteristics, career aspirations, and curriculum expectations

Franken (2007) claimed an individual's expectations are shaped by past experiences, self-perception and culture. Therefore a literature review was conducted to reveal the personal characteristics, curriculum expectations, and career aspirations of agricultural communications students. The literature available was limited. For example, the one consistent personal characteristic revealed was that the majority of students found in the agricultural communications classroom are female (Bisdor-Rhoades et al., 2005, Tucker & Paulson, 1988).

Agricultural communications students' curriculum expectations were also revealed by Tucker and Paulson (1988). They found students expressed a stronger interest in agricultural classes and affiliated organizations than those associated with mass communications. However, first year students were generally more likely to express a higher level of interest in non-agricultural subjects than their upperclassmen colleagues (Tucker & Paulson). Researchers also found students were more likely to rate the level of agricultural and communication interest higher than their perceived knowledge (Tucker & Paulson). When students were asked to list an alternative major, 58% chose another

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major within agriculture, while only 32% chose something within mass communications (Tucker & Paulson).

With regards to career aspirations, more than half the students tested by Tucker and Paulson (1988) expected to work in agricultural public relations or advertising, while only 23% expressed interest in working for mainstream communications outlets (Tucker & Paulson). Radio and television production was rated as the second most desirable job, while a career involving agricultural economics, business, or cooperatives was marked as least favorable among agricultural communications students (Tucker & Paulson).

From the literature, it is simple to see the amount of knowledge available for understanding a student's personal characteristics, career aspirations and curriculum expectations is limited.

Purpose of Study

Therefore, the purpose of this study was to describe agricultural communications freshmen perceptions of agricultural communications curriculum by describing the personal characteristics, curriculum expectations, and career aspirations of agricultural communications freshmen at Oklahoma State University, Texas Tech University, and Texas A&M University. In addition, this study described agricultural communications freshmen's interest and perceived importance of agricultural communications skills.

Methods

The study was designed as a descriptive census survey of agricultural communications freshmen at Oklahoma State University, Texas Tech University, and Texas A&M University. For the purpose of this study, agricultural communications freshmen were defined as first year university students registered in an entry level agricultural communications course in a well-established agricultural communications program. To qualify as a well-established program, the program's enrollment numbers had to be greater than 100 and it had to have at least three faculty members assigned to teach agricultural communications courses. Based on this definition, three locations were chosen to administer the instrument: Oklahoma State University, Texas Tech University, and Texas A&M University. The entire population for this study totaled 100 agricultural communications freshmen enrolled in the 2010 fall semester. A 54-question instrument was developed by the researcher by extensively reviewing the literature to administer to the population (Muijs, 2004) and adapting 30 phrases from a study conducted by Ciuffetelli (2002). The instrument was reviewed by a panel of experts —comprised of Oklahoma State University professors and graduate students — for content validity (Muijs, 2004) and a pilot test conducted to establish reliability. The reliability alpha of the pilot data interest scale was .832; and the pilot data importance scale had a .770 reliability alpha. Creswell (2008) reported anything above .700 was reasonably reliable.

After receiving Institutional Review Board approval from all three universities, an instrument was mailed to professors at Oklahoma State University, Texas Tech University, and Texas A&M University. On a day designated by the professor, freshmen enrolled in an entry-level agricultural communications course were asked to volunteer to take a 54-question survey. Answers were recorded by the participants on two scantron sheets provided, and mailed by to the researcher. No incentive or reward was offered to the participants or administrators for taking part in the study. Of the 100 surveys administered, 75 were returned. Seven surveys were eliminated from the census because the respondent did not report him/herself as a freshman, making the response rate 68%. Descriptive statistics like frequency and means were used to analyze the data.

Results

Personal characteristics

Of all the respondents, 54 were female (79.4%) and 14 were male (20.6%). Fifty-two of the respondents (76.5%) indicated to be 17 to 18 years old. When asked about the location of their university, 56 of the respondents (82.4%) reported they attend university within their state of residence and 11 respondents (16.2%) attended university outside their state of residence. When respondents were asked if they considered the place they grew up to be a rural or urban area, 50 respondents (73.5%) indicated they grew up in a rural area and 18 respondents (26.5%) indicated they grew up in an urban area.

Respondents were asked to indicate their agricultural experience (see Table 1) and communications experience (see Table 2) as part of their personal characteristics.

As part of their personal characteristics, respondents were asked to indicate their degree plan. Thirty-one respondents (46.3%) reported a degree plan of "agricultural communications". The second most reported major was "agricultural communications + agricultural major" accounting for 20.9% of all respondents (N=14). Respondents were asked to mark what individual was the most influential in helping them in their degree choice. The most common responses were "self-interest" (N=22, 32.4%), "FFA advisor" (N=15, 22.1%) and "college advisor" (N=11, 16.2%)

Curriculum expectations

Respondents were asked to indicate the amount of coursework in agriculture and communications they expected to have during the next four years. Of all the responses, 34 respondents (50.0%) expected to take an equal amount of agricultural and communications courses, 21 respondents (30.9%) expected to take more communications courses than agricultural courses, and 13 respondents (19.1%) expected to take more agricultural courses than communications courses.

Respondents were asked to report the type of agricultural sciences courses they expected to enroll in during their university experience. Fifty-two respondents (76.5%) expected to take a diverse set of agricultural science courses (i.e. animal science, food science, plant science); and 16 respondents

Table 1
Type of Respondents' Agricultural Experiences

	No. of Respondents	%
High school agricultural classes or FFA	19	27.9
Family owned livestock and/or crop production	18	26.5
No agricultural experience	12	17.6
Government programs	2	2.9
Employee of livestock and/or crop production	1	1.5
Agricultural communications employee	1	1.5
All of the above	14	20.6
Missing Data	1	1.5

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Table 2
Type of Respondents' Communications Experiences

	No. of Respondents	%
High school communications courses	16	23.5
Social media user	13	19.1
Member of high school yearbook or newspaper staff	12	17.6
Held a job with publication type company or organization	7	10.3
High school, community or religion organization reporter	6	8.8
No communications experience	3	4.4
High school, community or religion organization photographer	2	2.9
All of the above	8	11.8
Missing Data	1	1.5

(23.5%) expected to take a specific set of agricultural science courses (i.e. animal science: genetics, reproduction).

Respondents were asked similar question about their expectations for communications coursework. Forty-eight respondents (70.6%) expected to learn a broad set of communications skills, such as public relations, writing and web design, while 19 respondents (27.9%) expected to learn a specific set of communications skills such as public relations or advertising.

As part of their degree program, respondents were asked how many writing courses they expected to enroll in within the next four years. The majority of students (N=67, 94%) expected to enroll in at least one communications-based writing course. Twenty-six of those students (38.8%) expected to enroll in two communications-based writing courses. Four respondents (6.0%) did not plan to enroll in any communications-based writing courses.

Respondents were asked how many agricultural communications internships they expected to complete in the next four years. Most of the students (N=68, 92.6%) expected to complete at least one agricultural communications internship. The most common response selected was "two agricultural internships" (N=22, 32.4%).

In another course-specific curriculum question, respondents were asked to indicate if they believed agricultural economics/business courses were important for agricultural communications professionals. Sixty-one respondents (89.7%) reported "yes," one respondent indicated "no," and six respondents (8.8%) reported they did not know if agricultural economic/business courses were important for an agricultural communications professional.

Respondents were asked to indicate if they expected to join the National Agricultural Communicators of Tomorrow organization. Thirty-eight respondents (55.9%) indicated they planned on being a member, 23 respondents (33.8%) indicated they did not know, and seven indicated they did not plan on becoming a member.

Career aspirations

Respondents were asked to indicate their plans after graduation. Thirty-five respondents (51.5%)

planned to enter the workforce, while the other 32 (47%) planned to continue their education for a master's or doctoral degree. One respondent did not report his/her plans.

Respondents were also asked to indicate the type of corporation or organization in which they expected to work for after graduation. The majority of respondents (N=35, 52.2%) reported a desire to work in the agricultural industry. Twelve (17.6%) reported a desire to work for a non-agricultural industry. Other respondents claimed they desired to work for the government (N=8, 11.9%), for a non-profit (N=4, 6.0%), or in higher education (N=2, 3.0%).

Within the workforce, respondents were asked to indicate what type of position they expected after graduation. Thirty-two respondents (47.9%) chose a specific position listed and twenty-five respondents (37.3%) reported they wanted to work in a diversified position. Ten respondents (14.9%) marked "none of the above." Of the specific positions listed, "public relations representative" was the most commonly marked (N=13, 19.4%).

Another question asked respondents to report the location of their aspired workplace. The most common response was "work in my home state" (N=30, 44.1%) followed by "work in the United States" (N=13, 19.1%).

Respondents were also asked to indicate the salary range they expected to receive after graduation. No specification was made in the question as to which graduation (i.e. bachelor, master or doctorate) the question referred. The results are shown in Table 3.

Value of Communications Skill Sets: Interest v. Importance

Respondents were asked to rate their interest level or intrinsic value of 30 agricultural communications skill statements using a rated scale where 0 = "Not Interested"; 1 = "Somewhat Not Interested"; 2 = "Unsure"; 3 = "Somewhat Interested"; 4 = "Interested. Respondents were also asked

Table 3
Respondents' Future Salary Expectations

	No. of Respondents	%
A salary range of $60,001-$70,000	13	19.1
A salary range of more than $90,000	12	17.6
A salary range of $30,001-$40,000	11	16.2
A salary range of $40,001-$50,000	8	11.8
A salary range of $50,001-$60,000	8	11.8
A salary range of $20,001-$30,000	6	8.8
A salary range of $80,001-$90,000	6	8.8
A salary range of $70,001-$80,000	4	5.9

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to rate their importance level or extrinsic value of 30 agricultural communications skill statements using a rated scale where 0 = "Not Important"; 1 = "Somewhat Not Important"; 2 = "Unsure"; 3 = "Somewhat Important"; 4 = "Important." Tables 4 and 5 show all of the statements rated by the respondents, ranked 1 to 30.

Respondents' answers generated high standard deviations. The average deviation for respondents' extrinsic value was 1.03; and the average standard deviation for respondents' intrinsic value was 1.16.

Conclusions

Personal Characteristics

The majority of agricultural communications freshmen at Oklahoma State University,

Texas Tech University and Texas A&M University were 18-year-old females, raised in a rural town (population less than 10,000), and attended a university within their state of residence.

The most common agricultural experiences of agricultural communications freshmen at selected institutions were obtained in the high school classroom or on a family owned livestock and/or crop production. Communications experiences were obtained from high school communications courses, social media or from service on the high school yearbook/newspaper staff.

The most frequent degree plans reported by agricultural communications freshmen at selected institutions were "agricultural communications" and "agricultural communications + agricultural major." When making their degree choice, agricultural communications freshmen agreed the most influential individuals were: self, FFA advisor, and college advisor.

Curriculum Expectations

Agricultural communications freshmen expected to enroll in an equal amount of agricultural and communications courses, which would provide broad and diversified content. Most agricultural freshmen expected to enroll in one communications based writing course, an agricultural economics course and participate in at least one internship experience. The majority of agricultural communications freshmen at the selected institutions also planned on becoming a member of the National Agricultural Communicators of Tomorrow organization.

Career Aspirations

About half of agricultural communications freshmen at selected institutions planned to enter the workforce after graduation, while the other half expected to continue their education. Working for most of them meant going to work for the agricultural industry, within their home state. While in the work place, some of the agricultural communications freshmen planned to have a specific job title, such as public relations representative, reporter, broadcaster, etc., and the others expected to work in a diversified position allowing them to fulfill various roles. However, no consensus was found in agricultural communications freshmen's salary expectations at the selected institutions.

Value of Communications Skill Sets: Interest v. Importance

Agricultural communications freshmen ranked the total communications skill sets significantly higher ($p < .001$) in level of importance than they did in their level of interest. The skills sets most extrinsically valued by the freshmen were: describing the agricultural community to the public, resolving conflict and fixing barriers of communications between an organization and its public.

Agricultural communications freshmen held the most intrinsic value for teamwork, describing

Table 4

Skill Statements Ranked by Respondents' Level of Interest (Intrinsic Value)

Rank	Skill Statement	F	M	SD
1	Work as a member of a team	68	3.37	0.89
2	Describe the agricultural community to the public	68	3.34	1.04
3	Write with proper grammar and punctuation	68	3.21	1.01
4	Design a logo, advertisement, flier or brochure	68	3.13	1.08
5	Understand what makes a layout and design more pleasing to a viewer	68	3.12	1.06
6	Resolve conflict	68	3.10	1.11
7	Fix barriers of communication between an organization and its public	68	3.01	1.08
8	Use symbolism of color to enhance publications, websites, and advertisements	68	3.01	1.04
9	Determine ethical solutions to problems	68	3.01	1.06
10	Use graphics effectively to increase understanding	68	3.01	1.19
11	Report on a topic from various points of view	68	2.97	1.03
12	Develop an effective campaign	68	2.97	1.22
13	Select photos for proper medium	68	2.91	1.22
14	Evaluate the level of agricultural literacy in the United States	68	2.90	1.02
15	Talk with strangers about diverse topics	68	2.88	1.23
16	Effectively take shots from different angles	68	2.88	1.27
17	Identify bias in media stories	68	2.87	1.14
18	Use photo editing programs	68	2.81	1.40
19	Work under pressure	68	2.79	1.13
20	Operate camera equipment	68	2.76	1.39
21	Discuss the impact of government and legislative policy upon agriculture	68	2.72	1.21
22	Sort through information & select the most important material for an audience	68	2.68	0.99
23	Discuss environmental/global issues and their relation to agriculture	68	2.63	1.24
24	Use lighting to enhance photo elements	67	2.61	1.45
25	Understand the economical structure of agriculture	68	2.59	1.13
26	Apply the rules of Associated Press Style	68	2.49	1.19
27	Edit and critique others' work	68	2.40	1.25
28	Apply copyright laws	68	240	1.20
29	Understand the impact of biotechnology on world production systems	68	2.25	1.22
30	Analyze public perception of plant and animal food issues	68	2.07	1.30

Note. Classifications based on Cartmell's (2001) scale: M = 3.20 or higher = Interested; 2.40 – 3.19 = Somewhat Interested; 1.60 – 2.39 = Unsure; 0.80 – 1.59 = Somewhat Not Interested; 0 – 0.79 = Not Interested.

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Table 5

Skill Statements Ranked by Respondents' Level of Importance (Extrinsic Value)

Rank	Skill Statement	F	M	SD
1	Describe the agricultural community to the public	68	3.51	0.85
2	Resolve conflict	68	3.44	0.77
3	Fix barriers of communication between an organization and its public	68	3.40	1.03
4	Work as a member of a team	68	3.38	0.87
5	Write with proper grammar and punctuation	68	3.36	0.71
6	Work under pressure	67	3.31	1.12
7	Develop an effective campaign	68	3.29	0.82
8	Report on a topic from various points of view	68	3.25	1.03
9	Understand what makes a layout and design more pleasing to a viewer	68	3.24	0.96
10	Sort through information & select the most important material for an audience	68	3.16	1.02
11	Determine ethical solutions to problems	68	3.16	1.08
12	Discuss the impact of government and legislative policy upon agriculture	68	3.16	1.09
13	Talk with strangers about diverse topics	68	3.07	1.15
14	Design a logo, advertisement, flier or brochure	68	3.06	1.01
15	Evaluate the level of agricultural literacy in the United States	68	3.03	0.95
16	Use graphics effectively to increase understanding	68	3.03	1.04
17	Select photos for proper medium	68	3.03	1.12
18	Apply copyright laws	68	3.01	1.10
19	Identify bias in media stories	68	3.00	1.03
20	Discuss environmental/global issues and their relation to agriculture	68	2.99	1.02
21	Understand the economical structure of agriculture	68	2.97	1.08
22	Use symbolism of color to enhance publications, websites, and advertisements	68	2.97	1.16
23	Use photo editing programs	68	2.96	0.99
24	Edit and critique others' work	68	2.90	1.03
25	Operate camera equipment	68	2.90	1.09
26	Analyze public perception of plant and animal food issues	68	2.87	1.17
27	Effectively take shots from different angles	68	2.81	1.20
28	Apply the rules of Associated Press Style	68	2.76	1.15
29	Understand the impact of biotechnology on world production systems	68	2.65	1.09
30	Use lighting to enhance photo elements	66	2.53	1.18

Note. Classifications based on Cartmell's (2001) scale: M = 3.20 or higher = Interested; 2.40 – 3.19 = Somewhat Interested; 1.60 – 2.39 = Unsure; 0.80 – 1.59 = Somewhat Not Interested; 0 – 0.79 = Not Interested.

the agricultural community to the public, and writing with proper punctuation and grammar. However, the freshmen were unsure about their interest the following: edit and critique others' work, apply copyright laws, understand biotechnology and world production systems, and analyze public perception of plant and animal food issues.

It is important to note the high variation listed between the students. Respondents' answers were more varied on the intrinsic level than the extrinsic level. Students may have felt more freedom when expressing their personal interests, than judging the importance of agricultural communications skill sets. In addition, students may have developed some skills sets prior to coming to college, therefore adding variation to their response.

Implications for Practice

Effective curriculums are achieved when a balance is found between student interest, faculty vision and industry need; although students may not be able to participate actively on a curriculum development committee, most students cast their vote by deciding to continue in the degree, or switch to something else (Coffey, 1987). By assessing freshmen expectations and values, as outlined by Atkinson (1964), curriculum developers, evaluators and executers, have a better chance of understanding and advising a new student in agricultural communications, and, therefore, have the potential to increase student retention (Sullins et al., 1995).

Schunk and Pajares (2005) reported an individual's motive to engage in a future task is weighed against his or her past successful experience. For the agricultural communications freshmen at the selected institutions, past experiences were gleaned from the family farm, high school classroom or organizations. Such experiences must have been positive or rewarding, therefore, giving the freshmen an idea that they could be successful as agricultural communicators. As long as these courses are giving an accurate representation of agricultural communications, professors, and professionals should use high school curriculum as a catalyst for preparing future agricultural communicators.

Professors and curriculum evaluators should also consider the motivating influence of being raised in a rural community (population less than 10,000). The livelihoods of agricultural communications freshmen at the selected institutions were most likely influenced or shaped by an agricultural based economy. Since most of these freshmen were born, agriculture has evolved into a more technological and global industry; in addition, the rise of consumer influence in agricultural production has also changed the nature of the agribusiness (Doerfert & Miller, 2006). Hence, a desire to protect and communicate the importance of their livelihood could have become a strong driving force to major in agricultural communications.

However, expectancy or the existence of past positive experience is not considered motivational alone; rather it must be coupled with value to provide sufficient incentive to engage in the task (Franken, 2007). When considering agricultural communication skill sets, the freshmen at the selected institutions reported a significantly stronger extrinsic value ($p < .001$) than intrinsic value. "Unsure" averages for skill statements were only revealed on the interest or intrinsic side. Such statistics could pose a threat to agricultural communications student retention. Eccles et al. (1983) claimed a strong level of intrinsic motivation implies students' performance is self-initiated, self-sustaining and self-rewarding. However, a strong level of extrinsic motivation implies the need for a constant reward, such as grades or money. Without these external rewards the motivation for task achievement is diminished (Eccles et al). Therefore, professors and curriculum developers at the selected institutions should seek to appeal to students' strong intrinsic values of teamwork, describing agricultural

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communities to the public, and writing. Also, university recruitment specialists should recommend the degree choice of agricultural communications to those who show a strong interest in agricultural writing, design, photography, and Web design.

When outlining a student's four-year degree plan, expectations should also be considered. While industry experts claim communications skills should trump agricultural knowledge in curriculum (Morgan, 2008; Sprecker & Rudd, 1998), students still expect to enroll in an equal amount of agricultural courses and communication courses. However, the agricultural freshmen at the selected institutions did agree with the industry that the content of such courses should be broad and diversified. Academic advisers could assess their students' interest in different courses by showing a comprehensive list suggested by industry experts and compiled by Morgan (2008) and Terry (1996).

After graduation, half of the agricultural communications freshmen expected to enter the workforce, and the other half expected to continue their education. Buck and Barrick (1995) reported only 30% of agricultural communicators in six different professional organizations held a master's degree. If student expectations hold true, universities with graduate agricultural communications programs should consider how they will prepare to receive and recruit these students. Professionals should also consider how the increase of graduate degrees will affect salaries, leadership, and professional positions.

As student interest is included in the consideration of curriculum development and evaluation, there is a greater chance for student retention and satisfaction at all universities offering agricultural communication degree programs.

Recommendations for Future Research

The goal for agricultural communications curriculum at all institutions should be to balance student interest with faculty vision and industry need (Coffey, 1987). Therefore, further research should be done to ensure faculty's vision of agricultural communications curriculum matches the student interest and industry need presented in this study. If those visions and values do not align, further research should be conducted to discover the reasoning behind student, faculty, and industry differences. Morgan (2008) reported agricultural communications curriculum should be evaluated every two to five years to effectively mirror the needs of the industry.

More research should be conducted to understand agricultural communications student characteristics. Studies conducted in the past two decades show that agricultural communication programs have more females than males, yet provide no explanation. (Bisdorf-Rhoades et al. 2005, Bowen & Cooper, 1988). Research also should be conducted to explore agricultural and communication experience obtained before students enroll at a university. Since positive experience increase the likelihood of pursuing the task in the future, the following questions should be asked: do high school agriculture and communications curriculum paint an accurate picture of the industry? Do high school organization contests provide realistic experiences? Answers to such questions could provide valuable information for student recruiters and advisers.

More research is needed to discover if sophomores, juniors, and seniors' intrinsic and extrinsic values of agricultural communications are similar to the freshmen at the selected institutions. Bowen and Cooper (1988) claimed a student's interest level and participation in mass communications decreases with each class level. Since this research is outdated, new research is needed to assess students' interests. In addition, do student interest values change after they graduate and become professionals? If so, what influences such value changes?

Research should also be conducted to understand the intrinsic and extrinsic values that affect agricultural communications students' motivations. Some of the results of this study pose some interesting questions. For example, why were the freshmen interested in working as a member of a team, but unsure about their interest to edit and critique others' work? Or why are students interested in describing the agricultural community to the public and unsure about biotechnology and the public's perception of plant and animal food issues? By applying the same skills sets in an interview setting, researchers could learn much more about freshmen value systems.

In addition, this study should be replicated at other institutions. Erven (1987) claimed curriculum development should happen at the institutional level versus a general level. Programs in the South will vary from programs in the East and West, similarly to the students who live in and attend universities within those states. However, a content analysis of various student interest studies nationwide could have the potential to reveal general trends.

As future research is conducted within all three areas — student interest, faculty vision, and industry need – the agricultural communicators of tomorrow will be prepared to communicate and disseminate important scientific information in interesting and entertaining ways. Hence, becoming valuable citizens who effectively and responsibility stand in the "critical intersection of the practice of science and the public understanding of science" (Treise & Weigold, 2002, p. 320).

About the Authors

Tamra Watson graduated from Oklahoma State University with a Master of Science in Agricultural Communications in December of 2010. She currently works as a marketing specialist at the Utah Department of Agriculture and Food. Her passions include agriculture, academia, writing and the great outdoors. Tanner Robertson is an assistant professore of Agricultural Media and Communications at West Texas A&M University.

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Research

Is Perception Reality? Improving Agricultural Messages by Discovering How Consumers Perceive Messages

Joy N. Goodwin, Christy Chiarelli and Tracy Irani

Abstract

This study assessed how consumers interpret agricultural messages typically found on commodity organizations' websites in Florida. Four focus groups were held in the fall of 2010. Results indicate that the participants found most of the messages to be unfavorable, rather than favorable. Additionally, the conclusions made by the participants were explained as being influenced by previous experience, corporate influence, history, the creation of mental images, lack of supporting information, and media influence. Participants provided researchers with suggestions to improve the messages and create a more favorable response from consumers. Further research should be done in this area to continue to improve the effectiveness of agricultural messages. In addition, this research should be replicated in other geographic locations. The implications of this study provide valuable information for agricultural communicators, commodity organizations, industry professionals, and those wanting to tell the story of agriculture.

Keywords

agricultural communication, framing, social cognitive theory, messages, commodity organization

Introduction

American agriculture has transformed drastically throughout the last century. Where there once were multitudes of farms, now there are few (Dimitri, Effland, & Conklin, 2005). Technology has driven advances in agricultural production to its current state, which has allowed agriculture to continue to support our growing population. However, technology has also allowed many individuals to leave the farm for alternative occupations. Today, less than 2% of the working U.S. population is employed in an agricultural field. Additionally, well under 5% of the U.S. population now lives on a farm, while around only 20% of the population lives in a rural area (Dimitri et al., 2005).

The widening gap between those who produce and consume agricultural products has sometimes led to differing views between those who have an agricultural background and those who do not. For example, differing perspectives currently exist between producers and consumers on the issue of sustaining agriculture while being cognizant of natural resources and the environment, as well as other issues (The Center for Public Issues Education in Agriculture and Natural Resources [PIE Center], 2010). This phenomenon of differing views between consumers and producers has been character-

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ized as the "green divide," a "farm-to-plate knowledge gap," and a lack of "agricultural literacy" (National Research Council, 1988; PIE Center, 2010; Smart, 2009).

In 1988, the National Research Council found that "Most Americans know very little about agriculture, its social and economic significance in the United States, and particularly, its links to human health and environmental quality" (p. 9), suggesting that agricultural literacy among the members of the general public is minimal. Several additional studies have supported and expanded upon this finding (Duncan & Broyles, 2006; Frick, Birkenholz, & Machtmes, 1995; Frick, Birkenholz, Gardner, & Machtmes, 1995; Mayer & Mayer, 1974; Terry, Herring, & Larke, 1992; Wright, Stewart, & Birkenholz, 1994). Duncan and Broyles (2006) suggest knowledge and perception of agriculture, especially among young adults, is influenced by factors in their life such as media, acquaintances, involvement in organizations, and family.

Recently there has been a movement among agricultural commodity organizations and those involved in agriculture to try and develop greater awareness and understanding between producers and consumers. The movement is urging those involved in agriculture to become advocates for the industry and to tell their side of the story (Advocates for Agriculture, 2007; American Farm Bureau, 2003; Radke, 2009). As a result of this movement, many of those involved in agriculture are working toward developing more effective ways to communicate with the general public, especially via the Web. Creating an effective web presence allows the agricultural industry to extend their advocacy, build a community, and build relationships (Ohio Farm Bureau, 2009). However, it is important to assess the effectiveness of the messages the agricultural industry is sending to consumers. This is important because the intended meaning of a message may be perceived differently by consumers (Stevenson, 1997).

In agriculture, as well as in any business, it is essential to successfully promote a product or service (Moffitt, 2004). Through this promotion, information is given to the consumers and persuasion is often used (Kolter & Armstrong, 2006). A successful promotion will attract consumers and maintain or even increase profits. Often, strategic messages are designed to set the product or service apart from competitors (Moffitt, 2004). Understanding the perceptions of audiences and the way in which they interpret messages is crucial to developing effective communications strategies, if the goal is to favorably influence attitudes toward agricultural products, practices, and production industries.

Theoretical Framework

Much of consumers' interpretation of messages may be explained through framing and social cognitive theory. Thus, these two theories guided this study.

Framing is described as a function of messages that influences how an audience perceives the messages (Scheufele & Tewksbury, 2007). Entman's definition of framing provides further explanation:

> To frame is to select some aspects of a perceived reality and make them more salient in a communicating test, in such a way as to promote a particular problem, definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described. (1993, p. 52)

Additionally, framing is used to provide simplification to complex issues or concepts. Framing can exist on two levels. These levels have been identified as the media level and the individual level,

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also known as the macro-level and micro-level (Scheufele, 1999; Scheufele & Tewksbury, 2007). The media or macro-level describes how communicators or the media decide how to present information (Scheufele & Tewksbury, 2007; Shoemaker & Reese, 1996). At the individual or micro-level, framing is used by individuals to create their feeling or position in regards to the information presented to them (Scheufele & Tewksbury, 2007).

Framing can exist in four locations, including in the communicator, text, receiver, and culture (Entman, 1993). When deciding what information to include in a message, communicators select information that fits their schema, thus framing the message to fit their purpose or the purpose of the organization they are representing. The words that are used in a message can also include frames. The presence or absence of certain words, the inclusion of an image, the organization of the message and other components can influence the message to be interpreted in a certain way. Additionally, the receiver will possess pre-existing frames, influenced by previous social cues, which will direct their thinking, attitude, and behavior in response to the message (Carrier, 2004; Entman, 1993). The existing culture is composed of existing frames that describe the common social structure in the culture. Entman (1993) suggests that framing information with easily identified cultural symbols can increase the influence that the message has on an audience.

Consumers receive most of their information about agriculture from news organizations and the mass media (Terry, Dunsford, & Lacewell, 1996). Thus, several researchers have studied framing on agricultural topics (Ashlock, Cartmell & Kelemen, 2006; Ward, Donaldson, & Lowe, 2004; Whitaker & Dyer, 2000). A study of news coverage following a food safety crisis found that over half of the news articles analyzed regarding the issue framed agriculture negatively (Ashlock et al., 2006). An additional study compared the framing of agricultural articles in regular news sources and agricultural news sources (i.e. *Progressive Farmer*) (Whitaker & Dyer, 2000). That study found that agricultural news sources tended to frame their information with agricultural sources, while the regular news sources framed their stories with activist based sources. Additionally, the study found that news organizations framed their stories with images more regularly than did agricultural news organizations. Policy framing was discussed in a study by Ward et al. (2004) in reference to the United Kingdom's foot and mouth disease crisis. During this crisis policy framing of the issue was closed to those outside of the industry and was specific and restrictive. These studies looked at how the media framed agricultural messages, and also how agricultural organizations framed these messages.

As mentioned above, a receiver of a message will possess pre-existing frames, influenced by previous social cues, which will direct their thinking, attitude, and behavior in response to the message (Carrier, 2004; Entman, 1993). Social cognitive theory further explains the influence of previous social cues on the frames that one perceives in a message. The theory explains that cognitive processes are triggered by one's environment that ultimately impacts behavior (Bandura, 2009). An individual is influenced by his or her environment as a result of observational learning. For example, this may include an individual observing someone who is recycling and as a result of their observation they learn to recycle themselves. Individuals are more likely to observe and learn from items or people in their environment that they are attracted to, including media figures (Bandura, 2002; Nabi & Oliver, 2010). Through observational learning, individuals develop new and build on existing knowledge, values, attitudes, behaviors, and beliefs (Bandura, 1986; Bandura 2002).

Bandura describes the social cognitive process as involving the personal, environmental, and behavioral components of one's life (2009). His model suggests that these three things are related bi-directionally to one another. Individuals learn new things from their environment, cognitively

process them, retain them, and then use them at a later point it time. However, one's existing personal components and behaviors can influence how a new component from the environment is stored or used (Bandura, 2009). Ultimately, new information builds on previously learned information and the resulting behaviors are determined through cognitive processing. Due to the complexity and difficult testing of this theory many researchers use it as a reference and as a way to support their findings (Nabi & Oliver, 2010).

Purpose

The purpose of this study was to understand how consumers interpret agricultural messages by assessing the conclusions, feelings, opinions, and views consumers place on messages found on commodity organizations' websites in Florida. The following objectives guided this study:

1. To determine which messages produce favorable and unfavorable responses from Florida consumers.
2. To understand what factors led consumers to view messages as favorable or un-favorable.
3. To understand what messages Florida consumers would prefer to hear regarding Florida agriculture.

Methods

Focus group methodology was used to fulfill the purpose and objectives of this study. Focus group methodology is often used when little is known about the topic being researched (Ary, Jacobs, Razavieh, & Sorenson, 2006). Additionally, focus groups allow researchers to assess group interaction and the opinions of individuals (Krueger, 1994). This methodology "can improve the planning and design of new programs, provide means of evaluating existing programs, and produce insights for developing marketing strategies" (Krueger, 1994, p. 3). Focus group methodology was appropriate for this study because individuals' attitudes, perceptions, and opinions are often influenced by interaction with others, thus focus groups are useful in evaluating these tendencies.

Four focus groups were conducted within a two-week period. This timeframe allowed the researchers to reduce the threat of the history effect (Ary et al., 2006). The focus groups were conducted in two different geographic locations of Florida with two focus groups held at each location. A total of 36 participants participated in the focus groups with 7 to 10 participants participating in each group. Ary et al. (2006) recommend that the size of focus groups should be between 6 and 12 participants. An external market research firm was hired and used telephone random digit dialing (RDD) sampling to qualify potential participants. Probability samples were generated using a predetermined sampling frame based on demographic variables for both focus groups. A protocol was developed to guide both focus groups using the procedures set forth by Krueger (1998b). The protocol procedure consisted of showing the focus group participants a series of ten messages commonly used to educate and inform consumers about agriculture. The messages used in the study's protocol were first identified and determined by reviewing Florida commodity organization websites. Secondly, a pilot test was administered to graduate students in the Agricultural Education and Communication Department at the University of Florida. The pilot test consisted of an online survey hosted by Qualtrics. Qualtrics is an online survey software which has become a leader in market research and enterprise feedback management (Qualtrics, 2010). The survey included numerous messages and was administered to ensure that the messages were understood, as well as to identify the best

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messages to include in the focus groups. Krueger (1998a) indicates that pilot testing the focus group material for understanding increases the validity of the methodology. Once the messages were collected from commodity organizations websites and pilot tested, the final protocol was reviewed by a panel of researchers and industry professionals for face and content validity.

Each focus group lasted approximately one and a half hours. The focus groups were all conducted by the same experienced and trained moderator. The moderator was accompanied by an assistant moderator as well as two individuals who took field notes. Each focus group was both audio and video recorded for transcription purposes. The focus groups followed a protocol to ensure that a consistent questioning route was followed, participant observation and clarification occurred, and that participants verified a summary of each focus group before concluding. This process in combination with the pilot test creates trustworthy and valid results (Krueger, 1998a). Following the completion of the focus groups, data were transcribed by an external marketing firm. After transcription, data were uploaded into Weft-QDA for qualitative analysis. The constant comparative method was used to identify common categories within the data (Glaser, 1965). Categories were analyzed across all four groups and findings are based on agreements across all four groups or three of the four groups.

Results

Of those participating in the focus groups, 18 participants were males and 18 were females. The ages of the participants ranged from 18-80. Participants reported living in an urban or suburban area. The most common household income among the participants was reported as $60,000-$80,000. Additionally, 12 participants had a bachelor's degree and 31 identified with the Caucasian ethnicity. A diversity of professions was represented among the participants, some of which included stay-at-home moms, teachers, health professionals, manufacturing personnel, and administrative personnel.

The participants were asked about their perceptions of the10 messages selected from commodity organizations' websites that showed positive results in the pilot test and were approved by a panel of researchers and industry professionals. Messages were shown to participants in three sets in order to minimize the length of the focus groups as well as participant fatigue. The messages were grouped according to similarities. The first set of messages included "Best management practices," "Preservation of natural resources," "Wide open green pastures," and "Sustainable growth." Following these messages "Safe, fresh, and nutritious product," "Committed to producing the best quality product," and "Quality food begins with quality care" were included in the second set of messages. Lastly, "Farmers were the first environmentalists," "Stewards of the land," and "Scientifically proven, socially responsible, and economically sound" were included in the last set of messages.

Objective 1: *To determine which messages produce favorable and unfavorable responses from Florida consumers.*

To determine which messages consumers found to be favorable and unfavorable, the participants were asked to indicate whether they had positive or negative feelings about each message. All four focus groups indicated that they found "Stewards of the land" and "Preservation of natural resources" to be favorable. In addition, three of the four groups found "Wide open green pastures" and "Sustainable growth" to be positive.

Messages that created unfavorable feelings or negativity among the participants included: "Best management practices;" "Safe, fresh, and nutritious product;" "Committed to producing the best quality product;" "Quality food begins with quality care;" and "Scientifically proven, socially respon-

sible, and economically sound." Additionally, three of the four groups found "Farmers were the first environmentalists" to be unfavorable.

Favorable Messages

When discussing "Preservation of natural resources," many participants expressed that natural resources were important and essential. One participant indicated favorability toward this message by saying, "Preservation and natural resources and of course that's wonderful." The message "Stewards of the land" was also discussed favorably with many participants referencing the responsibility that the message demonstrated. An example of a participant's positive feelings toward this message is expressed in the following quote: "And I do like 'Stewards of the land.' They do have to have the land, even if they only have livestock; they still have to have the land to do whatever they need to do." "Wide open green pastures" also drew favorable responses from participants, as they were able to express the mental aesthetics that the message created. A participant indicated favorability toward the message by saying, "I guess it's better than little tiny cages. But, I feel better about green pastures." Lastly, several participants favored "Sustainable growth" because it was a message that allowed them to look toward the future in a positive manner. One participant expressed positive feelings toward the message by saying, "This is sustainable growth, and I'm like him on the growth thing. Life goes on, we sustain, we keep going."

Unfavorable Messages

When discussing "Best management practices," many people associated failure or distrust with this message. One participant said, "I'm really biased about best management practices. I guess I've been around best management practices for so long that I've come to totally distrust them. If it comes from that high up in the tower, it probably doesn't work." The group of messages that included "Safe, fresh, and nutritious product," "Committed to producing the best quality product," and "Quality food begins with quality care" caused skepticism and distrust among the participants. An example of the observed skepticism and distrust is demonstrated in the following quotes "I'm the cynic so I say prove it. You know I wouldn't take any of that at face value." "Yeah and that's like, we've been lied to so much, it's hard to believe any of them." "I feel a zero response for that. In expressing a word, they mean nothing to me. They sound like something that anyone can put on a product."

When participants discussed the message, "Scientifically proven, socially responsible, and economically sound," they discussed feeling unfavorable toward the message because it was lengthy and had a questionable meaning. One participant said, "'Scientifically proven, socially responsible.' That's a lot of bias and diversity in that statement. What aspect are you looking at, what's your belief in science and social responsibility and economics?" Additionally, "Farmers were the first environmentalists" was not favored because the participants felt that the statement was not accurate. An example of a participant's feelings toward this message is exhibited in the following quote:

> I can understand their imperative but to fling that out there is a bold statement. Hunter-gatherers really were the first environmentalists because they never taxed their environment beyond its carrying capacity. Because when they saw it wasn't going well, they moved on.

Objective 2: *To understand what factors led consumers to view messages as favorable or unfavorable.*

In order to understand why participants viewed these messages as favorable or unfavorable, par-

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ticipants were asked to further elaborate about their negative and positive associations with each message. In all four of the focus groups, themes emerged referencing previous experiences, business sounding terms, and examples of specific corporations as reasons behind the positive and negative connotations. Additionally, three of the four focus groups referenced history, the creation of mental images, lack of supporting information, and media or advertisements as leading them to their conclusions about whether the messages they viewed were favorable or unfavorable.

Previous Experience

When participants referenced previous experiences they often referenced knowledge they had, something they had heard from a friend, or something that they learned from an organization. One participant said:

> I think our oil situation is going to be solved very shortly. There's a huge basin of oil that was discovered in North Dakota and it takes about half the state and it goes all the way into Montana and there's enough oil to keep the United States going full-blast for the next 150 years. And this guy that's a friend of mine in Virginia was telling me about it, who is an oil driller and it's been kept a secret. But it's going to come out shortly. So maybe that'll end all this misery in the Gulf and Alaska and everywhere else, I hope.

Another said, "More positive, like my father had the grange, which the farmers belonged to. And they were also 4-H leaders for 10 years. So there are a lot of good farmers that obtained those."

Corporate/Business Involvement

Participants tended to be skeptical of business sounding terms and often referenced this as being a reason why they found messages to be unfavorable. A participant made the following statement:

> Because we have so many business people out there, they're going to use it just so they can make money. They're not really concerned you know out of 100% of the food that they're selling, probably 50% may contain that, but the other 50% is because they are going to make money off that 50%. It could be you know, cats' eyes, whatever, you don't ever know. To me, I don't trust it.

Another example of a participant's response is, "I think there's a difference between having a farm and growing food for your family and having that sort of thing going on and having a big industry farm, where you're there to make money and it's your business."

Similarly, participants referenced specific corporations that they knew had done something that they viewed as being unfavorable. They related to these unfavorable corporations when drawing conclusions about the agricultural messages. One participant said:

> And we used to have buzzwords before, best management practices, we could go off and we'd study GE or we'd study whatever. And guess what, it wasn't in the best management practices; it was in the management that needed the best management practices. And Ford didn't have that kind of management so we could study the best management practices until we all died or retired, whatever came first. And it wasn't going to change anything because we still

had the layer of clay that was the management. So it's another distraction, another bad thing to me.

History

A few of the messages prompted participants to think about events in history and, as a result, they drew their conclusions about a message based on history. The two historical events that came up in three of the four groups were the Dust Bowl and a discussion of the first settlers in America. One participant said:

> You start looking back at history where we fail to follow best management practices at the expense of our natural resources. You know like what was the Dust Bowl back in the days, you know all the topsoil got blown away.

Another said, "It's a very strong point you just made. Hunters and gathers were ahead of farmers in terms of environmentalists. Weren't they, the hunters and gathers? They were really the first environmentalists."

Development of mental images

"Wide open green pastures" was a message that led participants to be able to develop a mental image. They developed favorable images in their mind and therefore the participants felt favorable about the message. Some of the responses included, "I might buy into wide, open green pastures just because of that pretty image," and "I just think of wide, open, green pastures with windmills or something and I kind of have a picture."

Lack of supporting information

Several participants indicated that the messages sounded great, but they had no supporting information, thus causing them to feel skeptical of the message. Some of these responses included, "It's just a statement," and "Yeah, I think the last one is meaningless. It all sounds wonderful but scientifically proven, what is proved?"

Media/Advertisement influence

Participants referenced some of the messages as being something they had heard or seen in the media. Additionally, some participants thought that they had seen some of the messages on labels or in advertisements. When participants recognized a media or advertisement relationship within a message, they generally viewed it negatively and with skepticism. Some of the responses in this category included, "I think I heard some of them in the last presidential election. I think the preservation of natural resources was one," "I'm thinking of all of these in the context of something you see advertised in the grocery store," and "Commercials."

Objective 3: *To understand what messages Florida consumers would prefer to hear regarding Florida agriculture.*

Throughout the course of the discussion, three of the four groups made suggestions about how the messages could be made stronger or what messages they would like to hear. Some of the participants suggested changing some of the words in a message, including more local and farmer-

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related terms, providing examples and explanations along with the messages, and using more messages that create visual images.

Alternative words

Participants indicated that using alternative words could be beneficial because some of the words were not consumer friendly and created negative connotations. Once specific suggestion included, "There's not any such thing as best management practice, maybe better management practice, or good management practices."

Local and Farmer

When the participants were given the chance to express what kinds of messages they would prefer to hear many indicated that they favored terms with a local or farmer connotation. One participant said:

> Yeah, I would like to be able to see the local farmers, who's doing it, the area, you know, what they're using, how they're even making it, what type of pesticides or if it's a natural thing, composting, things like that.

Examples and explanations

Due to the skepticism that many of the messages created for the participants, they suggested that including examples and explanations in conjunction with the messages would make the messages more favorable.

> I would expect them to follow through. I would expect some explanation behind these words. They couldn't just say best management practices. Like, ok, these are catch terms but of course there's got to be some kind of info to back these up. You can't just stamp it on something and have me go, "Oh, great."

Create visual images

The participants suggested that part of the reason they favored "Wide open green pastures" was because it was something they could visualize. They discussed that they really liked being able to visualize what a message was referring to and thus provided incorporating more messages that create visual images as a recommendation. The following quote is one example of this recommendation: "The fact that none of them really send a real visual message with the exception of wide, open, green pastures. If you can just get the other ones to just draw something and maybe they'd be better."

Discussion/Conclusions

The findings of this study indicate that six of the messages tested were found to be un-favorable, while four of the messages were found to be favorable. Participants indicated that previous experience, business or corporate involvement, history, mental images, lack of support, and media or advertising language as leading them toward their favorable or un-favorable feelings about each message. To improve the messages, participants suggested incorporating more local and farmer-type terms, including examples and explanations, and using messages that create more visual images.

These results provide valuable information for agricultural communicators, commodity organi-

zations, industry professionals, and those wanting to tell the story of agriculture. Much can be gained from understanding messages that consumers find favorable and unfavorable, what factors lead them to these conclusions, and what they would like to hear and see in messages. Understanding these message elements will allow agricultural messages to be framed in a way that is potentially more likely to be perceived as favorable in the public eye.

Favorable and Unfavorable Messages

The findings of this study show that out of ten messages that were intended to positively promote the agriculture industry, only four were doing so in the minds of the participants. The six messages identified as unfavorable by the participants provide evidence that consumers do not always perceive an agriculturally themed message the way in which it was intended to be perceived. This finding supports Stevenson's claim that occasionally the intended meaning of a message is perceived differently by consumers (1997). Thus, it is important for communicators to recognize areas of differing perceptions in order to promote the agricultural industry (Moffitt, 2004).

Underlying factors of favorable or unfavorable feelings

The results of the study show that participants drew on previous experiences and elements they had observed in media or advertisements when determining if messages were favorable or unfavorable. This demonstrates implications of social cognitive theory, as individuals learn from their social acquaintances and media figures (Bandura, 2002; Nabi & Oliver, 2010). Additionally, it was evident, based on their responses, that these previous experiences were influencing the participants' attitudes, behaviors, values, and beliefs (Bandura, 1986; Bandura, 2002). These findings suggest that the participants' perceptions of agriculture are influenced by factors in their life (Duncan & Broyles, 2006)

Participant preferences

The way in which the messages were framed by their creators and how they were framed by the participants were not the always the same, suggesting that framing at the media level does not consistently correspond with framing at the individual level (Scheufele, 1999; Scheufele & Tewksbury, 2007). As suggested by the participants, including explanations and/or examples with messages may enhance the credibility of the messages with consumers. Providing more supporting information to the messages will also decrease the distrust, skepticism, and questions observed in the participants discussion.

Recommendations

It is recommended that to increase the occurrence of more favorable messages, agricultural communicators should focus on things that are important and essential in the eyes of the consumer, as well as words that relay responsibility, mental images, and a positive outlook for the future. Agricultural communicators should attempt to think like an average consumer who does not have an extensive agriculture background when creating messages. Being aware of both positive and negative media advertising trends will also aid agricultural communicators in using these trends to their advantage. Additionally, based on the frequent recall of previous media-related experiences or observations by participants, it is suggested that the agricultural industry work toward increasing their presence and the presence of accurate agricultural information in the media.

In addition, to decrease the occurrence of unfavorable messages, it is recommended that agri-

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cultural communicators avoid messages that cause failure, distrust, skepticism, and inaccuracy in the eyes of the consumer. To ensure that the correct components are being included in a message, it is recommended that all messages are pilot tested with a group of consumers to ensure that they are being perceived in the manner intended by the individual or organization that created the message.

Additionally, the participants indicated that business- or corporate-sounding messages created unfavorable responses. In order to improve consumers' perceptions of the messages released by the agriculture industry, it is recommended that messages designed for lay audiences be framed in personal terms rather than corporate terms. Additionally, it is recommended that an alternative message be developed in place of "best management practices." This message was the most un-favored by all of the groups. In addition, this message caused participants to think of corporate organizations who had claimed to have "best management practices." In an effort to minimize comparisons to other industries as well as prevent skepticism, this message should be used with caution or not at all.

The recommendations provided by the participants suggest that in order to correct the imbalance of individual- and media-level framing, message creators should work toward framing their messages to include more local and farmer-based terms as well as words that create mental images. It is recommended that messages be framed to include examples and supporting information. Additionally, communicators should frame messages to fit the current social structure in the culture, possibly through easily identifiable cultural symbols (Entman, 1993). Some of these cultural symbols may include stereotypic images of small farms and farmers.

Researchers should continue to conduct studies to determine how consumers perceive agricultural messages. It is recommended that this study be replicated in other geographic locations to determine if the results are similar in other areas. In addition, it is recommended that a study be conducted to determine how consumers perceive the original messages in comparison with revised messages framed according to the recommendations above. The results of this study and continuing research on agricultural messages have the potential to improve consumers' perceptions about agriculture and make strides toward bridging perceptual gaps between agricultural producers and consumers.

About the Authors

Joy Goodwin is a graduate assistant in the Agricultural Education and Communication Department at the University of Florida. Christy Chiarelli works as an Associate Director of Development for the University of Florida Institute of Food and Agricultural Sciences. Tracy Irani, PhD is a Professor in the Agricultural Education and Communication Department at the University of Florida and also serves as the Development Director for The Center for Public Issues Education in Agriculture and Natural Resources.

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Research

The Contribution of Selected Instructional Methods Toward Graduate Student Understanding of Crisis Communication

Christy Witt, David Doerfert, Tracy Rutherford, Theresa Murphrey, and Leslie Edgar

Abstract

Providing quality instruction that meets students' learning needs is an issue facing teachers of agriculture in higher education. A considerable amount of research has been devoted to assessing the effectiveness of various instructional methods, but the research is inconclusive in identifying a singular method of instruction that works well with all individuals. The purpose of this study was to examine students' perceived value of instructional methods in contribution towards their understanding of and confidence in risk and crisis communication content and practices. This study also compared students (N = 30) from two semesters to determine if new instructional methods incorporating new technology (i.e., Second Life) impacted the knowledge, comprehension, and self-confidence of students. In this descriptive survey research, the data revealed that students did not identify one singular instructional method as being most beneficial and influential, but found a combination of instructional methods influenced their self-confidence. No significant differences were found in changes in students' content knowledge scores or end-of-course degree of confidence scores.

Keywords

Second Life, crisis communication, instructional methods, effectiveness

Introduction and Framework

"An issue facing teachers of agriculture in higher education is providing quality instruction that meets the learning needs of students" (Garton, Spain, Lamberson, & Spiers, 1999, p. 11). One desire of every educator is to use instructional methods that meet the needs and learning styles of their students. However, many teachers struggle with choosing the methods that would be most effective. Rollins and Scalon (1991) discussed that "the educational community has devoted considerable effort to assessing the effectiveness of various instructional methods and teaching strategies. Research on teaching effectiveness has been *inconclusive in identifying a singular method of instruction* [emphasis added] that works well with all individuals" (p. 48).

This challenge might be explained by the findings of Rosenshine and Furst (1971) who reviewed 50 studies to identify the variables associated with the relationship between teacher behavior and student achievement. The authors determined that eleven teacher behaviors were associated with student achievement. Of the eleven teacher behaviors, the first five variables were considered to

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provide the greatest opportunity to influence student achievement (Garton, Miller, & Torres, 1992; Rosenshine & Furst, 1971). Those five teacher behaviors include: clarity, variability, enthusiasm, task-oriented and/or businesslike behavior, and student opportunity to learn criterion material.

One teacher behavior, variability (Garton et al., 1992; Rosenshine & Furst, 1971), should be taken into consideration when examining effective instructional methods. By incorporating variability, teachers focus on a variety of teaching methods and techniques instead of on a singular method of instruction. "Both high-inference and low-inference correlational studies have indicated that student achievement is positively related to classrooms where a variety of instructional procedures and materials is provided, and where the teacher varies the cognitive level of discourse and of student task" (Rosenshine & Furst, 1971, p. 45). Teachers should consider students' different learning styles and incorporate various (e.g., written, audio, and visual) instructional materials. Garton et al. (1992) also suggested that teachers should vary the cognition level of instruction, student questioning, and evaluation.

Theoretical Framework

The framework for this study was based on the classroom teaching model that was developed by Mitzel (1960) and expanded by the theoretical works of Dunkin and Biddle (1974). Mitzel (1960) originally proposed that teaching effectiveness criteria should incorporate a distinction between the products of learning and the process of learning. With this in mind, he proposed the criteria be classified as such: product criteria, process criteria, and presage criteria, which puts an emphasis on a "behavior conception of teacher effects on students" (p. 1483).

Dunkin and Biddle (1974) focused on what had been found about teaching in empirical research, taking "a long, hard, cold look at teaching from the viewpoint of those who have studied the actual behaviors of teachers and pupils" (p. 31). The authors suggested a model containing thirteen variables that were classified into four larger constructs following the terminology of Mitzel (1960): presage, context, process, and product. A simplified version of this model can be seen in Figure 1.

Presage variables include the characteristics of teachers that may be examined for their effects on the teaching process (Dunkin & Biddle, 1974), or variables that influence teachers and their teach-

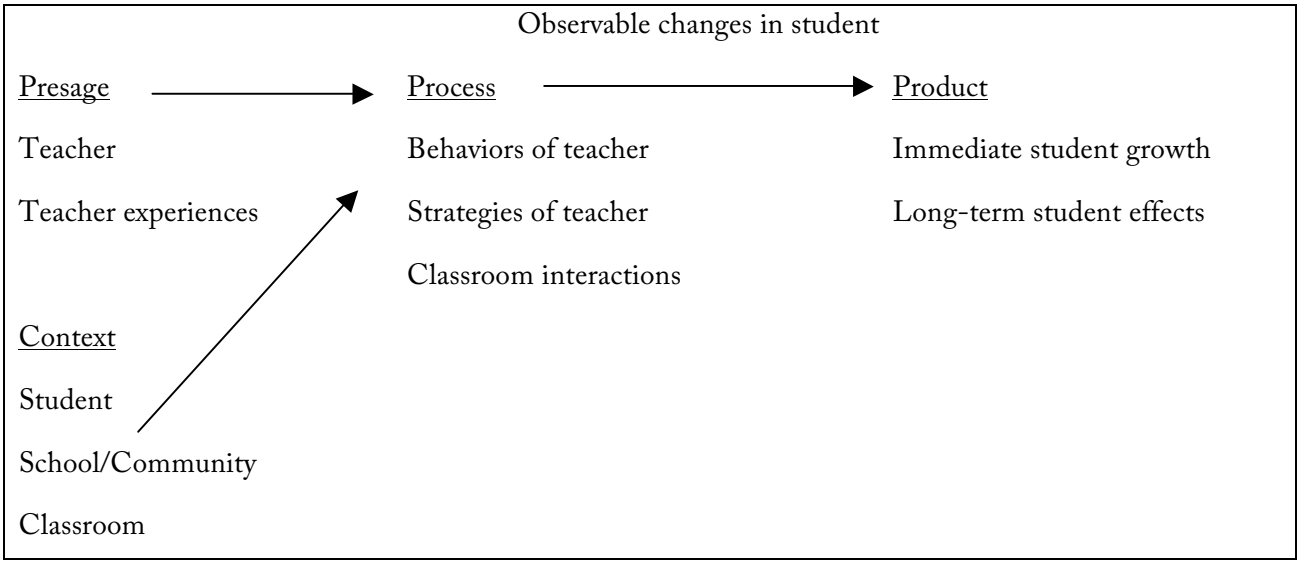

Figure 1. An illustration of the model for the study of classroom teaching. Adapted from *The Study of Study of Teaching* (p.38), by M.J. Dunkin & B.J. Biddle, 1974, New York: Holt, Rinehart, and Winston. Copyright 1974 by Cengage Learning. Printed with permission.

ing behavior (Cruickshank, 1990). Mitzel (1960) originally identified four presage variables, which include: teacher personality attributes, characteristics of teachers in training, teacher knowledge and achievement, and in-service teacher status characteristics. Dunkin and Biddle (1974) named three presage variables: teacher formative experiences, teacher-training experiences, and teacher properties. In the simplified version of this model, all of these variables are considered part of the factors associated with the teacher and their experiences.

"Context variables concern the conditions to which the teacher must adjust—characteristics of the environment about which teacher, school administrators, and teacher-educators can do very little" (Dunkin & Biddle, 1974, p. 41). The variables associated with context, as defined by Dunkin and Biddle (1974), include school and community contexts, classroom contexts, and students' formative experiences and student properties, which are considered part of the student factors.

Process variables are comprised of the activities of classroom teaching, including all of the observable behaviors of teachers and students (Dunkin & Biddle, 1974), or behaviors displayed in the classroom as teachers and students interact (Cruickshank, 1990). These variables incorporate "aspects of teacher and student behavior which are believed to be worthwhile in their own right" (Mitzel, 1960, p. 1483). According to Dunkin and Biddle (1974), the process variables are set within the classroom and include: teacher classroom behavior and student classroom behavior, which are shown interacting on the model. Within this construct is the variable "strategies of teachers." This variable is commonly under the singular control of the teacher and served as the primary focus of this study.

Completing the overview of the model, there are observable changes in the student from process to product. Product variables include the types of changes in student behavior that result from the process variables (Cruickshank, 1990). Mitzel (1960) defined product variables in terms of measurements of change in student behavior, such as student gains, student growth, or student changes. Dunkin and Biddle (1974) focused changes that come about in students as a result of their involvement in classroom activities with teachers and other students, incorporating the variables of immediate student growth and long-term student effects, which are similar to the variables in Figure 1.

The arrows that appear throughout the model each presume a causative relationship and serve as a source of hypotheses. For example, the formative experiences of the teacher (i.e., presage) tend to have an effect on classroom events in the form of the teacher behaviors and strategies (i.e., process) which lead to observable changes in the student behavior and in turn, immediate student growth and long-term student effects (i.e., product).

Conceptual Framework

Building on the process variable of teacher strategies, the literature included studies that examined potential instructional methods individually and in comparison with other methods. Schroeder (1993) examined the characteristics and learning preferences of post-secondary students in comparison to the mindsets and techniques maintained by university campuses. He concluded with a plea to fellow professors: "If we can expand the repertoire of learning activities open to us, perhaps we can greatly increase both our own satisfaction and our students' learning" (Schroeder, 1993, p. 26). When investigating effective methods and materials for teaching law to preservice teachers, Bruner and Bartlett (2008) found professors were using "a multiplicity of teaching methods that accommodate different learning styles" and concluded that "a variety of classroom activities—in the form of games, simulations, and role-playing—are important to make the learning real for students" (p. 43-44).

Bruner and Bartlett (2008) examined the aforementioned teaching methods in greater depth

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highlighting the pros and cons of each method. They began with lecture, the most often used method of teaching. They noted that lecture is appropriate for conveying information because instructors can disseminate vast amounts of knowledge in short periods. However, two disadvantages of this method discussed by Bruner and Bartlett (2008) are that higher-order critical thinking may not be addressed without opportunity to practice the skills and transfer of knowledge for long-term retention is difficult for most learners without application. "Many believe that students learn when lecture is used in combination with several other forms of teaching" (Bruner & Bartlett, 2008, p. 39).

Class discussions, as discussed by Bruner and Bartlett (2008), represent dialogue among participants where the instructor leads and facilitates discussion. For good discussion, it is important to create atmospheres of trust and clarify points of confusion that arise. Methods involving case studies "require students to identify the issues, find and consider applicable information, analyze their findings and draw conclusions" (Burner & Bartlett, 2008, p. 42). Case study methods also enable students to connect the practice to theory and the experiential to theoretical, as well as, allow students to discuss and analyze cases in a relatively non-threatening supportive peer environment (Schroeder, 1993).

Simulations and role-playing, which are methods where students can apply and extend their learning, were also discussed by Bruner and Bartlett (2008). These methods can be motivating and build confidence in students' communication skills. However, not all adults are comfortable with these methods, and it is important to debrief and evaluate learning to help integrate theory and practice (Bruner & Bartlett, 2008). The final method discussed was the use of technology, which can enhance the learning process for students. Most technology can be used by students on their own time 24/7; however, this can create a false expectation that instructors will also be accessible 24/7 (Bruner & Bartlett, 2008). The use of technology is also usually associated with a need for increased technical skills which can be a challenge for teachers and students.

This study, part of a larger United States Department of Agriculture Challenge grant, utilized a combination of these last two methods, simulation and technology, to provide a unique educational opportunity for graduate students enrolled in a *Risk & Crisis Communications in Agriculture and Natural Resources* course at Texas Tech University. "The use of computer-based simulations for supporting classroom teaching has interested educators in many fields of study…because of the opportunities it provides for students to apply knowledge they have acquired in the class" (Shifflet & Brown, 2006, p. 377-378). Simulations for this course were created through the use of Second Life (SL). Second Life was created by Linden Labs, a San Francisco-based corporation defined by its creators as "an online society within a 3-D virtual world entirely built and owned by its residents, where they can explore, build, socialize, and participate in their own economy" (Atkinson, 2008, p. 16).

"While Second Life wasn't developed specifically with education in mind, its open-ended possibilities have caught the attention of post-secondary educators across a wide array of disciplines" (Bowers, Ragas, & Neely, 2009, p. 40). Over 100 colleges, universities and other learning institutions have established an environment with instructional activities in SL. While it is not the only virtual world available, SL is "presently the best venue for learning how to teach in virtual space" (Pence, 2007, p. 177).

Hewitt, Spencer, Mirliss, and Twal (2009) discussed that virtual worlds have shown promise for delivering immersive experiences that allows for discovery, critical thinking, and analytical skills to a wide variety of learners. Bowers, Ragas, and Neely (2009) argued that virtual worlds may also help improve traditional distance learning, which is often rich in content, but low in interaction among instructor and learners.

Virtual worlds can also provide a high degree of apparent realism while minimizing the actual risk involved. SL allows for some manipulation of space and time, which "offers a new way to approach those parts of the world that were difficult to imagine,…[such as] visiting glaciers, or hot springs, or volcanoes, or a comet in outer space without leaving the classroom" (Pence, 2007, p. 174). "While virtual worlds are not new, development of teaching and learning within those environments may provide innovative opportunities to engage learners in highly social and interactive online experiences" (Atkinson, 2008, p. 17).

Purpose and Objectives

This purpose of this study was to examine students' perceived value of the instructional methods contribution towards their understanding of and confidence in risk and crisis communication-related content and practices. The following research objectives were used to address this purpose:

1. Determine students' content knowledge growth throughout the course using data from pre- and post-assessments for each semester.
2. Determine students' perceived degree of confidence for completing tasks associated with risk and crisis communication for each semester.
3. Determine students' perceived benefits and influence of different instructional methods used for each semester.
4. Compare student data from the fall 2009 and fall 2010 semesters to determine the impact of new instructional methods (i.e., Second Life crisis simulation).

Methods and Procedures

Population and Environment

The population for this quantitative study was graduate students enrolled in *Risk & Crisis Communications in Agriculture and Natural Resources* at Texas Tech University during the fall 2009 and fall 2010 semesters (N=30). This is a graduate-level course designed for master's students but open to doctoral students. This course was designed for both resident and asynchronous distance student enrollment. The course is taught annually every fall during a three-hour, once-a-week period for 15 weeks.

During the course, students were taught using a variety of instructional methods selected by the course instructor. Methods used in the fall 2009 included lecture/discussion, weekly personal journal entries, online case study discussions, in-class role play, and team-developed case studies of a previous agriculture-related crisis event. Methods used in the fall 2010 were slightly modified to incorporate new technology and thus included lecture/discussion, weekly journal entries, online case study discussions, a Second Life crisis simulation, and individually developed crisis management plans.

Instrumentation

Pre- and post-assessment instruments were designed based on risk and crisis competencies and the objectives of the course to determine the students' content knowledge before and after the course. Pre-assessments were administered at the beginning of the course each semester to measure students' prior knowledge of the content and related practices. Post-assessments were administered at the end of each unit to determine changes in student understanding. The difference between the pre- and post-assessments scores were used to determine the students' change in understanding during the course each semester. In terms of threats to internal validity, testing effect could be seen as a weak-

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ness. However, this was controlled by large intervals between tests, which make the pretesting effects less threatening (Ary, Jacobs, Razavieh, & Sorensen, 2006).

The study also utilized a 76-item end-of-term questionnaire to examine the students' perceived value of instructional methods in contributing towards their understanding of and degree of confidence in being able to perform each of crisis management competencies. Items were measured using a degree of confidence scale and Likert-type scales. The degree of confidence scale ranged from zero to ten where 0 = *Cannot do at all* to 10 = *Highly certain that I can do*.

For each of the instructional methods, twelve statements were provided to determine the perceived value of instructional methods. These statements were (a) Made the content more realistic, (b) Made the class interactive, (c) Helped the class to be fun, (d) Aroused my interest in the course content, (e) Was effective in increasing my knowledge, (f) Kept me current with related risk and crisis communication activity, (g) Improved my discussion and collaboration skills, (h) Improved my teamwork & cooperation with class participants, (i) Improved communication skills about risk and crises, (j) Improved my decision making and critical thinking skills, (k) Improved my problem solving skills, and (l) Increased my self-confidence as a potential crisis communications professional. The students were asked to respond to each of these statements for each of the instructional methods used by indicating their level of agreement using a Likert-type scale of one to seven where 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Slightly Disagree (SID), 4 = Neither Agree nor Disagree (N), 5 = Slightly Agree (SIA), 6 = Agree (A), 7 = Strongly Agree (SA). The students were also provided a Not Applicable option (N/A, scored as a 0) if they did not feel the statement was relevant to their learning. The instrument was slightly modified from fall 2009 to fall 2010 to reflect the changes in instructional methods made by the instructor, which included adding the Second Life simulations in place of the in-class role play and replacing the team-developed case study with the individually-developed crisis management plan.

A panel of faculty and agriculture industry experts reviewed both instruments for face and content validity. Cronbach's alpha coefficients were used to measure internal consistency in order to establish reliability. The reliability coefficient for the scales used in these instruments produced Cronbach's alpha scores ranging from .869–.987.

Data Collection and Analysis

The pre- and post-assessment instruments were administered using the Blackboard course management system located at the instructor's university. The 76-item instructional methods questionnaire was administered to resident students in paper format and emailed to distance students as a Word document that the students completed and returned to the researcher, which were then printed and added to the others without recognition of the participants' names.

Descriptive statistics were used to analyze the numerical data for the first three research objectives. Class means and standard deviations were calculated for the student assessments. The difference between the pre- and post-assessment scores was calculated to determine mean changes in students' content knowledge scores. Students' perceived benefits of each instructional method were averaged and summed to determine which instructional method students thought was the most beneficial. For each instructional method, the summated score could range from 0–84. A t-test score was calculated to determine if there was a significant difference between the mean changes in students' content knowledge scores.

Results and Findings

The first objective addressed by this study was to determine students' content knowledge growth throughout the course using data from pre- and post-assessments for each semester. As displayed in Table 1, the mean score for students from the fall 2009 were pre-assessment 67.38% (*SD* = 9.51) and post-assessment 90.24% (*SD* = 7.20) with a mean change in students' content knowledge scores of 22.30% (*SD* = 8.90). The mean scores for students from the fall 2010 were pre-assessment 70.28% (*SD* = 6.10) and post-assessment 88.94% (*SD* = 8.68) with a mean change in students' content knowledge scores of 18.66% (*SD* = 9.55).

Table 1
Class Means on Assessments & Mean Change in Students' Content Knowledge (N = 30)

	Pre-assessment		Post-assessment		Change in
Semester	M	SD	M	SD	scores
Fall 2009 (n = 17)	67.38	9.51	90.24	7.20	22.30
Fall 2010 (n = 13)	70.28	6.10	88.94	8.68	18.66

Objective two sought to determine students' perceived degree of confidence for completing tasks associated with risk and crisis communication for each semester. Students were also asked to determine which instructional methods had the greatest influence on their self-confidence as a future crisis communicator. Of the fall 2009 students, 47.1% (*n* = 8) perceived team-developed case studies as having the greatest influence. Among the fall 2010 students, there was a little more variability as to what they identified as having the greatest influence: 38.5% (*n* = 5) identified the Second Life crisis simulations and 38.5% (*n* = 5) identified the crisis management plans. Students were also asked to rate their degree of confidence in completing a variety of risk and crisis communication-related tasks. The mean score of the students' confidence to complete those items in fall 2009 was 7.39 out of 10 (*SD* = 1.23) and in fall 2010 was 7.51 out of 10 (*SD* = 1.06).

The third objective addressed by this study was to determine students' perceived benefits and influence of different instructional methods used for each semester. As displayed in Table 2, students' perceived benefits of each instructional method were averaged and summed to determine which instructional method students thought was the most beneficial. For fall 2009, students found team-developed case studies (Σ = 69.77) and lecture/discussion (Σ = 69.52) to be most beneficial instructional methods. For fall 2010, students found four instructional methods to be almost equally beneficial: online case discussions (Σ = 70.93), lecture/discussion (Σ = 69.69), Second Life crisis simulation (Σ = 67.38), and crisis management plans (Σ = 66.32).

Students were also asked to mark which instructional method they perceived as having the greatest influence on their abilities. The results were as follows: 64.7% (*n* = 11) of students from fall 2009 perceived lecture/discussion as having the greatest influence on their ability to understand and discuss crisis management and risk communication; whereas, students from fall 2010 perceived both lecture/discussion (38.5%, *n* = 5) and crisis management plans (30.5%, *n* = 4) as having the greatest influence on their ability to understand discuss crisis management and risk communication. When students were asked which method had the greatest influence on their ability to increase their critical

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thinking skills as related to course content: 41.2% (n = 7) of students from fall 2009 perceived team-developed case studies as having the greatest influence; whereas, students from fall 2010 perceived both crisis management plans (38.5%, n = 5) and the Second Life crisis simulation (30.8%, n = 4) as having the greatest influence.

Table 2
Summed Means of Students' Perceived Benefits & Influence of Instructional Methods (N = 30)

	Summed Means	
Instructional Method	Fall 2009 (n = 17)	Fall 2010 (n = 13)
Lecture/discussion	69.52	69.69
Weekly personal journal entry	56.17	49.52
Online case study discussion	62.55	70.93
In-class role play	60.23	N/A
Second Life crisis simulation	N/A	67.38
Team-developed case study	69.77	N/A
Crisis management plan	N/A	66.32

Note. Summated scores were calculated using the responses from the 12 statements associated w each instructional method. Individual scores and summed means results could range from 0–84

Objective four sought to compare student data from the fall 2009 and fall 2010 semesters to determine the impact of new instructional methods (i.e., Second Life crisis simulation). To compare the mean change in students' content knowledge scores for each semester, as displayed in Table 3, the mean differences between pre- and post-assessment scores was calculated. As reported in Table 1, the mean change in students' content knowledge scores for fall 2009 was 22.30% (SD = 8.90) and the mean change in students' content knowledge scores for fall 2010 was 18.66% (SD = 9.55). The alpha level for this research was set at .05 *a priori*. A t-test indicated there was no statistical significant difference between the mean changes in students' content knowledge scores from each semester with a test value of 1.08 (p = .29).

A comparison of students' end-of-course mean confidence level scores is displayed in Table 4. As reported above, the mean confidence level score was 7.39 (SD = 1.23) for fall 2009 students and 7.51 (SD = 1.06) for fall 2010 students. The alpha level for this research was set at .05 *a priori*. A

Table 3
Comparison of Mean Change in Students' Content Knowledge Scores (N = 30)

Semester	*M*	*SD*	*t*	*p*
Fall 2009 (n = 14)	22.30	8.90	1.08	.29
Fall 2010 (n = 16)	18.66	9.55		

Table 4
Comparison of Students' End-of-Course Mean Confidence Level Scores (N = 29)

Semester	*M*	*SD*	*t*	*p*
Fall 2009 (n = 16)	7.39	1.23	-.29	.77
Fall 2010 (n = 13)	7.51	1.06		

t-test indicated there was no statistical significant difference between the mean changes in students' content knowledge scores from one semester to the other with a test value of -.29 (p = .77).

Discussion and Conclusions

Upon examination of pre- and post-assessment scores for each semester, it was found that students from both semesters experienced a positive change in their mean content knowledge score, which consisted of a 22.30% mean change in fall 2009 and an 18.66% mean change in fall 2010. However, upon further investigation of the change in students' content knowledge scores and the use of an independent t-test, there was no significant difference (p = .29) found between the fall 2009 students and fall 2010 students.

It was also found that upon completion of the course, students' perceived their degree of confidence to complete a variety of risk and crisis communication-related tasks on average between "moderately certain that I can do" and "highly certain I can do" with the fall 2009 students rating themselves an average 7.39 out of 10 and the fall 2010 students rating themselves an average 7.51 out of 10. Although many students perceived the end-of-course projects (i.e., team-developed case studies in fall 2009 and crisis management plans in fall 2010) and the Second Life crisis simulation (only in fall 2010) as having the greatest influence on their self-confidence as a future crisis communicator, all five methods were identified by some students as having the greatest influence on their self-confidence as a future crisis communicator.

Within this course, students perceived a variety of instructional methods as being beneficial to their learning. Students from both semesters identified lecture/discussion and the end-of-course projects (i.e. team-developed case studies in fall 2009 and crisis management plans in fall 2010) as beneficial and influential with fall 2010 students also identifying online case discussions and Second Life crisis simulation as highly beneficial. This could possibly be explained by the findings of Bruner and Bartlett (2008), who concluded "Good practice encourages interaction…Interactions in the form of lecture and class discussions can create interest and motivation and so build self-efficacy in students. Lecture and discussions can lend themselves to didactic and constructivist instruction" (p. 43).

Students identifying methods that had the greatest influence on their abilities to understand and discuss crisis management responded by naming lecture/discussion in both semesters and the end-of course project in fall 2010. Finally, students identifying methods that had the greatest influence on increasing their critical thinking skills as related to course content responded by naming end-of-course projects (i.e., team-developed case studies in fall 2009 and crisis management plans in fall 2010) and the Second Life crisis simulation (only in fall 2010). These findings support the discussion presented by Osborne and Hamzah (1989) who while investigating teaching methods stated "Generally accepted components of problem solving teaching are being used by agriculture teachers.

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However, lecture-discussion is also often used by teachers to present problem solutions or answers to students" (p. 35).

Overall, the results of this study revealed that students did not identify one singular instructional method as being most beneficial and influential, but found a combination of instructional methods influenced their self-confidence. This is similar to the research of Clayton, Blumberg, and Auld (2010) who concluded "learners want engaging learning environments that promote 'direct interaction with professor(s) and students,' 'spontaneity,' 'immediate feedback,' and 'relationships with faculty and students,'" which are achieved in the classroom settings through a variety of instructional method (p. 362).

This study raised a number of questions needing further investigation. First, this study should be replicated with a larger population to increase the confidence and subsequent generalizability of findings. Second, this study should be replicated in different settings, at different universities, and with various subjects to further determine if type of instruction effects student success. Third, as with any study of methods, student factors such as internal motivation, interest in topics, prior experiences with instructional methods, and personal learning styles should also be considered to fully understand how these factors influence students' knowledge acquisition. Finally, further study is encouraged to better understand the connection between instructional methods and students' degree of confidence and additional studies should consider looking directly at students' perception of the benefits and influence of specific combinations of instructional methods.

While this study provided support for Dunkin and Biddle's (1974) model for the study of classroom teaching by highlighting the observable changes in students from process to product, a key component that should be considered is the use of a variety and/or combination of instructional methods in creating those changes.

About the Authors

Christy Witt is a doctoral student in Agricultural Education at Texas Tech University. Dr. David Doerfert is a Professor and serves as Associate Chair and Graduate Studies Coordinator in the Department of Agricultural Education & Communications at Texas Tech University. Dr. Tracy Rutherford is an Associate Professor and Dr. Theresa Murphrey is an Assistant Professor, both in the Department of Agricultural Leadership, Education, & Communications at Texas A&M University. Dr. Leslie Edgar is an Assistant Professor in the Department of Agricultural & Extension Education at the University of Arkansas. This project was supported by Higher Education Challenge Grant no. 2009-38411-19768 from the USDA National Institute of Food and Agriculture. This article is based on a prior presentation at the 2011 Association for Communication Excellence Conference in Agriculture, Natural Resources, and Life & Human Sciences.

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Research

Using Facebook as a Communication Tool in Agricultural-Related Social Movements

Mica Graybill-Leonard, Courtney Meyers, David Doerfert and Erica Irlbeck

Abstract

A social movement is a personal obligation taken on by an individual, due to either a personal experience or responsibility, to pursue action to implement a change in a community or society. Facebook is a social networking device in which users interact through conversations, and build relationships by networking with other users. Facebook groups are created as part of a smaller community within the social networking site and focus on particular interests or beliefs about certain issues. The purpose of this study was to determine why individuals use social media, specifically Facebook, to communicate information in social movements related to agricultural issues. Eight semi-structured interviews were conducted with Facebook group administrators who actively contribute to the promotion of an agricultural-related social movement. Results indicated that Facebook was a beneficial communication tool to help the social movements reach more individuals. The Facebook group administrators were motivated to become involved with the social movement due to personal experiences. Although Facebook is the primary method used to reach target audience members, the participants said they use a variety of other communication channels. Additional research should explore other social movements to determine the impact social media has on communication efforts.

Keywords

social movement, social media, Facebook, interviews, online communication

Introduction/Theoretical Framework

Communication is often cited for its role in creating change and has been used since the beginning of time to relay information, implement knowledge and skill, manipulate views and beliefs, and develop connections and relationships among people (Rogers, 2003; King, 2003). Communication has played a major role in facilitating change in agriculture in the past and suggests how new social media technologies could be used to advance agriculture, as well as to relay up-to-date information to agricultural specialists (Anderson-Wilk, 2009).

Advancements in agriculture and technology have generated a crucial need for the industry to effectively communicate agriculture and issues to the public (Roth, Vogt, & Weinheimer, 2002). This communication about agricultural issues is often in the form of social movements. Social movements can be defined as personal responsibilities or commitments, initially created by a leader or an experi-

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ence, in which a strong belief is held and action is taken to attempt to implement change (Gerlach & Hine, 1970). Local advocacy communication, a subset of social movement communication, includes efforts of advocates to communicate through publications, mailings, mass media, the Internet, interpersonal contact, meetings, phone calls, demonstrations, and other media (McHale, 2004).

Communication through online communities and social media websites has sparked one of the most significant social developments society is yet to know (Experian Marketing Services, 2010). Social media sites are Internet- and mobile-based tools for sharing information, interacting, and building relationships among individuals. Forms of social media include blogging, podcasting, video blogging, and other various social networks. Each of these is designed to give society a way to reach out and connect with others. Brogan (2010) said people like to engage in social media to feel like they are being heard and that their thoughts and feelings are respected. Some social media and networking websites are broad and attract diverse audiences while others focus specifically on certain hobbies and interests. Sites also vary in the communication tools they offer to users including mobile connectivity, blogging, and photo/video sharing (Boyd & Ellison, 2007).

Facebook is one of the most popular and universal social media and networking sites (Kabani, 2010). In 2010, Facebook active user numbers increased to more than 500 million. Users spend an average of 20 minutes a day engaging in the site and at least half of the entire Facebook population logs in once a day (Kabani, 2010). Facebook can be divided into four main parts: profiles, groups, pages, and events. Profiles are how people represent themselves to others. Users make their profile pages unique to their own style, interests, and creativity. Groups are created by users and allow them to take part in smaller communities within Facebook that support certain interests or beliefs that are shared by others. Once individuals engage in groups and become active members, they have the ability to receive information that may not be available to them in any other form. Facebook groups also give these individuals the chance to participate in other activities and come across opportunities they otherwise may not have had (Park, Kee, & Valenzuela, 2009).

A 2009 American Farm Bureau Federation survey of young farmers and ranchers found 46% of young (aged 18-35) farmers and ranchers who use computers regularly interact in some form of social media (Hoffman, 2009). These producers used Twitter, a social networking site, to share news from around the farm (Hoffman, 2009). Google Maps and Google Earth are being used to help farmers plot their land (Hest, 2008). Agriculturalists use video-sharing sites such as YouTube to post videos, commercials, news packages, and documentaries (Bradshaw, 2009).

The theoretical framework used in this study combined intentional social change theory, social capital theory, computer mediated communication theory (CMC), and uses and gratifications theory. Intentional social change theory addresses a change agent's attempt to bring about proposed change with specific objectives and goals (Sato, 2006). A change agent is an individual who influences people's opinions regarding their decision-making process about innovation in a direction that is considered desirable by the change agent or its company (Rogers, 2003). Intentional social change theory states that people use their own ideas and thoughts to manipulate the actions and opinions of others in a way that the outcome is seen as beneficial. Four main characteristics of social change are: 1) it happens everywhere, but the rate at which change actually occurs varies from place to place; 2) social change is most often intentional, but it is almost always unplanned; 3) social change creates controversy among individuals, organizations, or societies at large; and 4) some changes have more significance than others (Macionis, 2001).

The second theory applied in this study was social capital theory. Social capital is a concept most

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often used to refer to social economic status and how people use their resources to succeed. It is the knowledge and experiences that have been gained from being members in particular social groups or organizations, jobs that have been offered because of a certain status or contact, or even just contacts who are referred to as a friend of a friend (Woolcock & Narayan, 2000). Social capital is often associated with networking because it states that the people we know and keep in contact with will enhance our social status through material or social gain. Woolcock and Narayan (2000) said social capital refers to the "norms and networks that enable people to act collectively" (p. 3). This applies to individuals and whole groups or organizations as well. Research conducted over the past two decades (Foley & Edwards, 1999; Woolcock, 1998) indicated that social capital can be used a number of ways in order to gain different benefits, such as engaging in social media to build personal relationships or networking with co-workers to improve working conditions.

The third theory used, computer-mediated communication (CMC), encompasses the use of networks of computers and technologies to aid in interaction and communication. These technologies include, but are not limited to, e-mail, discussion boards and forums, instant messaging capabilities, computer video conferencing, and other online databases (Romiszowski & Mason, 1996). Research has implied that CMC can create change in the way people communicate and interact with one another and can influence certain communication patterns and social networks (Fulk & Collins-Jarvis, 2001). This statement basically implies that CMC leads to social effects. CMC sets the foundation and creates structure for social relations. It is also the gap between relations that occur and the tool that individuals use to bridge that gap (Jones, 1995).

The final theory used in this study's theoretical framework was uses and gratifications. Uses and gratifications theory attempts to explain the uses and functions of media for individuals, groups, and society. This theory basically discusses why people choose particular media to fulfill certain needs. People choose their own media consumption so they may incorporate it in their lives in a way most beneficial to them. Users are goal-oriented in their media consumption and application. This theory suggests that media compete with other sources of information in order to fulfill the user's gratifications (Katz, Blumler, & Gurevitch, 1974). Blumler and Katz (1974) conducted the first research to explain the connections between the audience's motives, media gratifications, and outcomes. In more recent years, with the arrival of the Internet, the perspective and study of uses and gratifications and the role the theory plays in people's lives is even more relevant (Bumgarner, 2007). Audiences have an important responsibility when obtaining messages from the Internet because they are actively seeking to receive certain information (Bryant & Zillman, 2002).

Many studies involving Facebook discuss how uses and gratifications theory can be applied. Bumgarner (2007) found college students use Facebook to follow their friends' profiles and to keep up with what their friends were doing. Joinson (2008) found Facebook users develop a variety of uses and gratifications from social networking sites, including traditional content gratification, communication, and surveillance. Raacke and Bonds-Raacke (2008) evaluated the impact that social networking sites, particularly MySpace and Facebook, have on college students. The majority of students were using these social networking sites to build new relationships and maintain existing relationships. Results also indicated several gratifications were met including making new friendships, keeping in contact with old friends, or using Facebook as a marketing or promotional tool (Raacke & Bonds-Raacke, 2008).

Purpose and Objectives

Research Priority 2 in the *National Research Agenda (NRA): American Association for Agricultural Education's Research Priority Areas for 2011-2015* (Doerfert, 2011) recognizes the need to examine the "challenges and opportunities brought about by rapidly advancing technologies" and "evolving consumer demands, needs, and behaviors" (p. 8). The purpose of this study was to determine why individuals use social media, specifically Facebook, to communicate information in social movements related to agricultural issues. To achieve that purpose, the following research objectives were used:

1. Describe the characteristics of the participants of the Facebook groups that address social movements related to agricultural issues.
2. Describe each participant's motivation to become involved with the social movement.
3. Describe how communication channel decisions were made to promote the social movement.

Methods & Procedures

To address the research objectives, a descriptive, qualitative research approach was implemented using in-depth interviews with the administrators of eight selected Facebook groups that discuss social movements in agriculture. A qualitative study was determined to be the most effective approach to obtain the quality of answers and information needed for the study. Qualitative research is research about a "person's lives, lived experiences, behaviors, emotions, feelings, and feelings about organizational functioning, social movements, cultural phenomena, and interactions between nations" (Strauss & Corbin, 1990, p. 11).

Participants in the study were purposively selected. Purposeful sampling occurs when a researcher specifically selects participants because of their characteristics and knowledge on the topic being researched (Morse & Richards, 2002). The purpose of the study was to locate groups that represented agricultural issues, so individuals with only personal Facebook pages were not selected for the study. Researchers established selection criteria prior to searching Facebook for participants. In order to be considered for this study, groups had to be supportive of agriculture, have at least 1,000 members, been updated several times within the past month with current news or information, and the administrator of the group had to be involved with posting most of the information (as opposed to members of the group).

To begin the sampling process, a search was conducted on Facebook using the following keywords: "agriculture," "farming," "ranching," and "animals." Many results were immediately eliminated from participation in the study because they were either electronic spam (the abuse of electronic messaging systems and solicitation through Web services) or did not meet criteria set by the researcher. Using the established criteria, the returned results were evaluated to identify the Facebook groups that were relevant to the study. Each selected participant was the Facebook group administrator. While the participants represented different sectors of the agricultural industry, they all supported their agricultural topics instead of opposing them.

Once the potential participants were identified, they were initially contacted using the Facebook e-mail-messaging tool, followed by an e-mail recruitment letter. Additional participants were identified using a snowball technique in which the potential participants recommended other people they knew who might participate in the study. Through their recommendations, the researcher contacted four others through the Facebook e-mail-messaging tool. Once participants agreed to be interviewed and provided their phone number, the lead researcher contacted them to further explain the study and schedule a time for the interview. Before beginning the actual interview, all participants

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agreed to verbal informed consent information. Table 1 shows the different types of groups that were involved in the study, and provides a pseudonym to protect the participant's identity.

Table 1
Characteristics of Facebook Group Administrators

Pseudonym	Mission	Members in Group
Shawn & Jill	Watching practices of the United States Humane Society	167,550
Jeremiah	Taking a stand against the agenda of the United States Humane Society	18,071
Mark	Shares the importance of telling agriculture's story	11,611
Dustin	Created for people to share all aspects of agriculture	4,331
Blake	A place to connect with farmers and ranchers	2,334
James	A place for farmers and ranchers to connect with communities using social media	1,848
Katherine	Aim to improve media's perception of U.S. agriculture	1,631

Note. Membership numbers were as of September 24, 2010.

A panel of experts familiar with qualitative research and in-depth interviewing reviewed the questioning guide composed of 30 questions. Wording, structure, and order were carefully considered when creating the questions in order to obtain detailed answers from respondents, as well as to ensure that no questions would be seen as biased. Between the dates of September 6, 2010, and September 20, 2010, eight semi-structured interviews were conducted by telephone with participants who lived across the United States. Each interview was conducted using the same questioning guide and lasted approximately 45 minutes.

The telephone interviews were recorded using a digital recording device and hand-written notes. The lead researcher transcribed each of the interviews then analyzed the results using NVivo 8.0 (a data management software designed to help store and analyze qualitative data). The interview transcripts were coded for common themes and categories.

Findings

Objective 1: Describe the characteristics of the participants of the Facebook groups that address social movements related to agricultural issues.

Each of the participants was an administrator of a Facebook group that represented social movements related to agriculture. Three of the eight participants were paid to administer their Facebook group as a part of their jobs. The other participants started their Facebook groups and volunteer their time to the group. In order to gain a better understanding of the study's participants, demographic questions asked age, gender, and geographical location. The mean age was 30; the median age was

28; the mode was 40. Six of the participants were male and two were female. Although all the participants represented Facebook groups within the United States, the geographic locations varied. Three of the participants resided in Washington D.C., while the other five participants lived in different locations across the United States: Arkansas, Missouri, South Dakota, Ohio, and California.

The participants had either completed a bachelor's degree or master's degree, or were in the process of completing a bachelor's degree. Participants were also asked to give a brief explanation of their professional background. All of the participants were involved with the agricultural industry either directly or indirectly; five of the participants were producers in the agricultural industry, while the other three were employed in the industry by an agricultural organization.

During the interviews, participants were also asked when their Facebook groups were formed. Each of the Facebook groups was formed within the last two years – the oldest was started in April 2009 and the most recent started in May 2010. The majority of participants had been their group's administrator since the group was founded. Most participants indicated that their primary responsibility to their Facebook group was to update the page with new information and content, and to monitor what members post. Some participants also said they create links between the articles and information posted to Facebook, Twitter, blogs, and websites. Several participants responded that their main concern is to inform people about important issues. One participant said his mission was to "keep members motivated and communicating about agriculture."

Objective 2: Describe each participant's motivation to become involved with the social movement.

A dominant theme of what first motivated the participants to become involved in the cause they were advocating was personal experiences. For some participants, this experience was a negative one that affected them and being involved in the social movement or cause helped them tell the other side of the story and share their own experiences. One participant said he had a videographer tape a farm near his family's farm and then expose the footage in a negative light. Blake said: "About five years ago, some anti-ag activists got some undercover video of a farm we knew well. I then realized how quickly and easily they could turn the perception of farm life around into a negative aspect."

Five of eight participants said they are invested in their cause because it is something that has been instilled in them their entire lives. Mark said: "For us, supporting this cause is very personal. Both my wife and I have grown up around agriculture, and we love it very much." Other participants commented about farming and ranching being their livelihood for as long as they can remember; having grown up around agriculture has instilled a passion and motivation to promote the industry. Jeremiah said, "When it comes to agriculture, it is something I have been a supporter of my whole life."

Another theme for motivation for involvement in the cause is the desire to see the movement succeed in the future. Several participants mentioned that they are involved in actively promoting their cause for their children and future generations to come. The overall message from participants was that if they do not fight in favor of agriculture now, future generations will suffer, which means that it will affect their children. Blake said, "Agriculture is something that, like most farmers, I really enjoy and at very least, I try to make sure when I have kids someday that they have the same opportunities that I did."

Participants were asked to describe how they are committed to their cause. Several participants commented that the most important way is their effort to make sure consumers and producers have

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the most accurate facts and information. Participants said they can stop rumors from being started if they actively continue to advocate and give people information. Participants also noted they like to have face-to-face conversations with people to advocate for their cause because having actual conversations with people can encourage interest. Jeremiah said: "It's just talking to them and seeing what they actually know. Then it's my duty to give them the basic facts and encourage them to do what they can in support of agriculture."

Participants said their commitment to their cause involves sharing their story with others so people like them will want to share their story as well. Participants said the Facebook groups are a good opportunity to encourage agriculturalists to take a stand for a cause that affects them personally.

Specific emotions or opinions urged participants to become involved in their movement or cause. Participants said they were angry when people do not know the facts behind agriculture and fight against the industry. Shawn said, "I get angry when I see these things that are unfounded coming from people who have absolutely no idea what it's like being a farmer."

Several participants said they feel sympathy for those in agriculture who are being targeted by those who oppose agricultural practices. Katherine said, "It is a terrible feeling when there is an attack on people and the industry from people who are uneducated."

In order to better understand why the participants were using Facebook for their causes, they were first asked why they personally joined Facebook. Participants said the decision was due to social pressures to communicate and stay in touch with family and friends. They said Facebook is a good way to stay in contact with people, to network, and to meet new people. Another reason for personally joining Facebook was for professional use. Some participants said they thought joining would be a good tool to embrace for their careers.

When asked what motivated them to use Facebook to promote their movement or cause, participants indicated that Facebook actually allowed their cause to exist. The creation of the Facebook groups provided a communication channel for the promotion of the social movement. None of the social movements in this study existed before the creation of the Facebook groups. Because the participants had been using Facebook for personal reasons, they were familiar with how groups could be used to promote or support their cause. They applied that knowledge to create their own Facebook groups for their social movements.

In addition, participants said they chose Facebook because many other organizations were already using it and so many people were already participating in this social networking site. The visible success of other Facebook groups encouraged the participants to utilize Facebook to promote their causes. Shawn said:

> We first looked at Facebook to see what other people were doing. One thing is PETA had something like 650,000 Facebook fans, and at the time I thought, "They are exceptionally good at organizing grassroots." I thought that was an impressive number of people to reach through technology.

To participants in this study, Facebook seemed to provide the most efficient forum for people who wanted to engage in issues and discussions about the movement or cause. People need a place to talk to others who share the same beliefs, and participants said Facebook had the most users within their target population. Jill said:

A lot of people who are fans of ours are actually the older demographic, which is currently the fastest growing demographic on Facebook. They are finding out that it's a way they can get online and engage in issues they care about.

Objective 3: Describe how communication channel decisions were made to promote the social movement.

Participants used several communication tools to promote their causes. Along with Facebook, participants used Twitter, YouTube, blogs, websites, podcasts, articles, newsletters, and word of mouth. Participants said they are not limited to any one communication channel; they will use anything that can be effective in spreading their message. When asked why each participant chose particular communication channels to communicate with their members, the most common theme was that the tools being used are free. Some of the Facebook groups are non-profit and do not have available funding to advertise. Many of the social media platforms and online communication forums are free, so organizations are not hurting themselves by trying each one out to see which, if any, will be most effective. Shawn said, "We are always measuring the efficiency of communication vehicles in terms of 'cost per click' or 'cost per eyeball.'"

Another common theme was that the communication tools were well-known among the target audience, and were already being used by many different people. Katherine said, "We chose the communication channels we use because they are the most well known and have the most users, which makes them most applicable to us." Participants indicated that they were already noticing who was using the communication channels, which had a major impact on which ones were chosen. Overall, participants agreed that the chosen communication channels were effective in promoting their social movements. Shawn said, "If something wasn't working for us, we wouldn't be wasting our time with it. We would have already moved on and tried something else that would get the job done."

When evaluating the effectiveness of Facebook as a communication channel, the determining factor for participants was the number of users who were already on Facebook. Blake explained: "The biggest factor for me was the fact that there were already 500 million users on Facebook. That shows that it's a place where people are going for information." Others said the number of users was an obvious reason for them to utilize Facebook. With so many people already on Facebook, it seemed that information provided on the site in support of causes or movements would reach people one way or another. Jeremiah said: "You put stuff out there, and people are going to find it. If they believe in it, they are going to follow it. It obviously reaches a large number of people; there is no question in that."

Another indicator of Facebook's effectiveness was the number of people who were urging the participants to take part in it. Participants said that if other organizations were urging its use, and they had been successful in their efforts, then it would be a good tool to embrace. Blake said: "If you look at a lot of anti-agriculture groups, they are using those tools as free PR and actually to further spread their message. If they are making use of it, it should be the same for us."

Participants promoted their Facebook groups by inviting friends and people through the friend finder tool. This method is quick and relatively simple, and has been an effective way for some of the participants to get a jump-start on promoting their movement through Facebook. Some participants also used any advertising they could afford as a way to promote their Facebook groups. Several participants commented they promote their Facebook groups on their YouTube or Twitter accounts, especially if they are targeting the same audience through both social media sites.

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When participants were asked how frequently their groups were maintained, they agreed that updates to Facebook groups should be made no less than two times a week. Some participants said it was important to update the Facebook page as often as possible (Shawn indicated that he posts every couple of hours) while some participants said posting too often could be counter-productive. Participants said that when new information is posted on the group's Facebook page, members most often comment and respond to information if it is something they view as important and care about. Several participants agreed there are key players who are very active and comment often while many members visit the group's page and get information, but may never make a comment. When asked how trustworthy the information is on Facebook pages, participants indicated they closely monitored information being posted by others to make sure the information is accurate and is not negative toward the mission of the cause or movement. Some participants said they had others help them monitor and update their Facebook group's posts.

Conclusions, Implications, & Recommendations

Overall, participants represented different demographic characteristics related to age, gender, and geographical location. The average age of participants was 30, and six of the eight participants were male. Participants' geographic locations were representative of various regions across the United States. When speaking in terms of educational backgrounds, all participants either had a college degree or were in the process of obtaining a degree. All of the participants were involved with the agricultural industry, either directly or indirectly. Each of the Facebook groups had been created within the last two years, and the participants were the key representatives of each group either as administrator, founder, or both. Participants' responsibilities for managing their Facebook group included maintaining the page, updating new information frequently, and monitoring what was posted.

As Anderson-Wilk (2009) said, communication has had a significant influence in facilitating change in agriculture in the past and new social media technologies could be used to advance agriculture in the future. Social movements in agriculture are necessary to advocate on behalf of strongly held beliefs or actions. These advocacy movements utilize various forms of communication (McHale, 2004) including social networking sites that allows members to reach out, connect with others, and feel like they are being heard (Brogan, 2010). Those involved in agricultural pursuits are using social networking sites to share and find information (Bradshaw, 2009; Hest, 2008; Hoffman, 2009).

Participants in this study feel strongly about their cause or movement because of experiences, emotions, and opinions. Intentional social change theory recognizes the role these change agents (Rogers, 2003) have in using their own ideas and actions to influence people's opinions in order to bring about the desired change (Macionis, 2001). Using social networking sites, such as Facebook, helps create social capital (Foley & Edwards, 1999; Woolcock, 1998). Social capital theory states that the personal relationships one has can be used to achieve some desirable outcome. It is important to note that the social movements explored in this study did not exist before Facebook. The social networking site provided the motivated individuals with an avenue to share opinions, stories, and information. As uses and gratifications theory states, people choose particular media to fulfill certain needs and will utilize that media in a way most beneficial to them (Katz, Blumler, & Gurevitch, 1974). Prior studies have found several gratifications associated with Facebook use including content gratification, communication, surveillance (Joinson, 2008), making new friendships, keeping in contact with old friends, or using Facebook as a marketing or promotional tool (Raacke & Bonds-Raacke, 2008). Facebook was selected by the participants because they were familiar with it

as a communications tool, noticed that other organizations were successful using it to reach audience members, and it was free.

In addition to Facebook, participants used other different communication channels to promote their social movements. Many of these, such as Twitter, blogs, and websites, are computer technology-based and the theory of computer-mediated communication recognizes that these technologies can be used to build social relationships (Jones, 1995). The participants said these communication channels were chosen based on their ability to provide awareness, help increase memberships within the groups, share information about the cause, and allow people to have a central place to discuss topics and issues. Participants said they believed their Facebook groups are effectively reaching their audience members and providing beneficial information related to the social movements they are promoting.

Based on the findings from this research, it would be in the best interest of agricultural communicators to utilize Facebook, along with other social media tools, to communicate agricultural issues to the public, and to promote social movements. Facebook reaches a large audience and has the capability to disseminate information at an extremely efficient rate. It is a free tool that does not have any sign-up or annual fees. Others who are considering using Facebook should follow best practices for using this communication tool. (Additional data were collected from these participants regarding these best practices; this information will be provided in another manuscript.)

The purpose for this study was to gain insight into how agricultural communicators are utilizing Facebook to promote social movements. Because the use of social media is still relatively new, additional research is needed to determine why people are using it, and how to effectively market a group or cause through Facebook or other social media tools. It would be useful to gain updated information on computer-mediated communication (CMC) and to explain the effects of why people use this particular form of media to interact with one another. If it was better understood why people use social media and what they are hoping to gain from their experiences, future communicators can more effectively target their messages to their audience segments.

The participants made assumptions about what their audience members wanted or needed in regard to information, but a better understanding of their audience members would further improve the effectiveness of their communication efforts. A quantitative survey with people who are members in these Facebook groups should be conducted to help determine why people use it and what benefits they gain by engaging in Facebook. This study should also explore the types of groups or fan pages people join and why they join them. The question is raised as to whether people who join these groups are really a fan of the group, or if they have other motivations for joining. An example of this would be if people joined a group simply because their friends were joining the group. By conducting research with the members of the group, it would help identify the users and gratifications of the members based on their own perceptions and experiences.

Social movements in agriculture have existed for centuries; the use of social networking sites to influence social change is a relatively new undertaking. It was apparent from this study that Facebook allowed these movements to exist, which is in itself, evidence of the significant impact this social networking site has had in today's society. Additional research and development of best practices will further refine the use of social networking sites to encourage desired changes in many areas, including agriculture.

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About the Authors

Mica Graybill-Leonard completed her master's degree in agricultural communications at Texas Tech University in December 2010. She is currently a sales representative for Eli Lilly and Company. Courtney Meyers is an assistant professor in agricultural communications at Texas Tech University along with David Doerfert, professor in agricultural communications, and Erica Irlbeck, assistant professor in agricultural communications.

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Research

Television Journalists' Perceptions of Agricultural Stories and Sources in Texas

Kori Barr, Erica Irlbeck, Courtney Meyers, and Todd Chambers

Abstract

Agricultural organizations often struggle to have their messages heard on television news. Stories about agriculture often contain interview sources that are sometimes not equipped with the first-hand knowledge to answer questions about the subject, leaving agricultural organizations wondering why their experts were not interviewed. The purpose of this study was to explore factors that influence the selection of stories and interview sources for television stories in an effort to improve agricultural organizations' presence in television news. Fifteen participants from four Texas television markets were interviewed. The data indicate that newsworthiness of agricultural stories depended on market size, with larger markets airing agricultural stories only when highly newsworthy—usually some sort of crisis— events occurred, and smaller markets were more willing to run agricultural stories that could include seasonal stories (harvest, planting, etc.), agricultural innovations, weather's impact on a crop, or agriculture's impact on a community. In addition, although opinions on the credibility of certain agricultural sources varied from person to person, governmental sources were considered to be credible in general, with commodity groups, corporations, and interest groups being perceived as a bit less credible. Conclusions were drawn that familiarity and acquaintanceship play a large role in the selection of sources by reporters, and the researchers recommend that agricultural organizations strive to cultivate these relationships to allow for better information transfer.

Keywords

television reporters, agriculture, gatekeeping theory, source credibility theory

Introduction/Theoretical Framework

Determining how and why the media choose stories that air in broadcast news or are published in print is not always an easy task. Stories are often selected based on many factors, such as the needs of the community, the pressures within an organization, or the preference of individuals in the newsroom (Scheufele, 1999). News determinants such as timeliness, proximity, prominence, consequence, and human interest can also play a role (Arnold, 2006).

However, as agricultural organizations work to present their messages to a wider audience, it is important for agricultural communications practitioners to understand how stories are chosen for broadcast or publication. In addition, many qualified agricultural organizations are never given an

This research study was presented at the 2011 Association for Communications Excellence Conference held in Englewood, Colorado.

opportunity to be interviewed, and previous research found that activists are quoted five times as often as scientists (Anderson, 2000). Exploring how reporters determine which stories to report and then select interview sources can help agricultural communicators better promote their experts and stories.

Research on news coverage of food safety crises found that reporters are not opposed to using agricultural organizations as sources, but many reporters may not be aware of these organizations and the experts that are available for interviews (Irlbeck, Akers, Baker, Brashears, Burris, & Duemer 2010). However, during the 2009 Salmonella outbreak in peanut products, researchers found that out of 101 television news stories about the outbreak, only two agricultural sources—the U.S. Secretary of Agriculture and a state department of agriculture representative—were interviewed (Irlbeck, Akers, & Palmer, 2010).

In such cases where agricultural organizations or reputable experts are not selected but should be, understanding why is important. In every case, it is vital to develop an understanding of how to help agricultural groups and organizations present their information to the media so that sound agricultural information can be parlayed to the general public.

With a movement in the United States where consumers are now curious about the origins and production practices of food, an increase in media coverage about food production has been noted. Sometimes the sources for these stories are often only tangentially involved in agriculture. Eyck (2000) found a common trend in media reporting was to choose sources that were unreachable by consumers and highlight one side's viewpoint over the other, but still not provide enough information for consumers to make educated decisions about the topics. "The changing nature of agriculture and its impacts on the American economy mean that agricultural communications is crucial to the creation of an agriculturally literate public" (Lundy, Ruth, Telg & Irani, 2006, p. 59).

In addition, previous agricultural communications research (Ruth, Eubanks, & Telg, 2005) and anecdotal evidence indicate incorrect information presented in agricultural stories. When incorrect information is presented about agricultural issues, the backlash toward the industry can be enormous even when the information is erroneous. One study found that, when dealing with BSE, newspapers presented information that had not been scientifically researched and was presented in a negative manner with wording that could cause fear or other negative reactions in readers (Ruth, Eubanks, & Telg, 2005). When factual information is lacking, the information gap can grow between the agricultural industry and the general public.

This study can help agricultural organizations understand how gatekeeping and source credibility can affect the media's view of their organization and use that information to become a more visible and credible source for the news media. In doing so, more solid information will reach the general public, and the agricultural industry will appear more credible and knowledgeable about its own subject.

Purpose and Objectives

The purpose of this study was to examine, explore, and explain the factors that influence the selection of story topics and interview sources for agricultural stories aired in a local network affiliate television newscast. Agricultural stories can be broadly defined, but for the purposes of this research, the researchers investigated stories related to crop and livestock production, agricultural events (harvest, planting season, etc.), agricultural weather, food safety, and agricultural disasters, such as accidents, problems related to weather, or safety scares.

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Television was the basis of this study due to the ubiquitous nature of television news and the high saturation of televisions in U.S. households. Television continues to be used quite heavily despite the increasing use of Internet news media and social media, with as many as 99% of households owning at least one television (Nielsen, 2009).

The following research questions were formulated to guide this study:

1. What is the frequency of agricultural stories presented on television stations in Texas as perceived by local reporters and news directors in both large and small television markets?
2. What makes an agriculture story newsworthy to a local television station?
3. How do members of television newsrooms view different sources related to agriculture?

Gatekeeping and source credibility studies are not uncommon, but a greater understanding of how these two concepts impact the agricultural communications industry has not widely been discussed.

Theoretical/Conceptual Framework

Gatekeeping Theory

Gatekeeping is the process of selecting certain bits of information and discarding others in order to craft which messages actually reach the audience. Lewin (1947) found that forces can determine if information makes it through any particular gate. These forces can be positive or negative, and can change once information has made it past one of the gates (Shoemaker & Vos, 2009).

In addition, the way an individual newsroom operates influences which news items are selected for further elaboration and which are discarded. It also influences how the resulting story is shaped and presented (Shoemaker & Vos, 2009). Breed (1955) observed that although executives at a news organization may set matters of policy, they cannot collect information, interview sources, and write the news themselves. These tasks must be passed on to others working at the organization, and at that point, the attitudes and influences of those individuals help shape the news stories (Breed, 1955).

Gatekeeping theory is primarily descriptive and does not attempt to predict why sources will be chosen, instead attempting to explain the process gatekeepers go through in choosing their sources and story angles by summarizing the various influential forces that affect the decisions of reporters on which topics should be presented (Roberts, 2005).

Source Credibility Theory

Source credibility theory helps explain why individuals may buy into certain messages based on how trustworthy the source of those messages appears to be (Bobbitt & Sullivan, 2005). Initial source credibility research found the retention of factual information was not greatly impacted by an individual's perception of the credibility of the source. Instead, it was the credibility of the information (Hovland & Weiss, 1951). Studies conducted on source credibility in later years expanded on this topic and found that source credibility could often be determined by the perceptions of the receiver toward individual sources, and not on the objective characteristics of those sources (Berlo, Lemert, & Mertz, 1970).

When reporting on a story that may be an unfamiliar topic, reporters and news directors may search for the first source that appears credible by using metrics such as the organization's perceived trustworthiness and expertise (Bobbitt & Sullivan, 2005). When an agricultural story is covered, a

source deemed to be trustworthy may not necessarily be a person with a strong connection to agriculture. Sources that have an established relationship with media will have first access to getting stories aired, and entities such as interest groups can gain media attention, in turn gaining public support for their continued operation (Eyck, 2000; Irlbeck et al., 2010). Sources selected using such methods or without prior knowledge of the industry may present faulty information that a reporter may have no reliable way to verify.

The perceived credibility of a source, either by reporters or viewers, can also influence how often that particular source is used. Source credibility itself is composed of how trustworthy a source is perceived and the source's personal expertise. Within these two components is a sub-component: prestige. When a source is more prestigious, viewers may be more inclined to agree with comments that are made by that source (Gibson & Hester, 2007).

Methodology

When gathering the opinions of news directors and reporters, in-depth opinions were sought in order to provide rich and detailed information about the subject. A basic interpretive qualitative research method was selected for this research, which according to Merriam (2002), is based on the primary characteristics of qualitative research.

The researchers conducted 30-minute interviews of employees at television stations in Texas. Interviews were chosen as the method of research because of the one-on-one nature and the fact that focus groups between competing television stations or between different markets would be difficult, if not impossible. By utilizing interviews, the researchers were able to communicate with the participants on a personal basis and tailor the basic questions to account for further depth, clarity, and explanation.

In addition to the open-ended questions involving story assignments, source selection, and credibility, the participants were asked to comment on a list of sources that had been previously prepared. The sources prepared for review were loosely grouped into three categories: governmental sources, commodity groups, and special interest groups. Participants were asked if they had ever heard of each particular source, how credible they felt the source was, and if they would ever use that particular organization as a source of information or interviews for their stories. These sources were chosen for their connection to agriculture, whether this connection was official government organization (such as USDA) or an activist group (such as PETA or the Sierra Club). Sources were selected to present a wide range of different groups that represent the agriculture industry. In addition, many of the sources are frequently used by the national television media during agricultural stories.

Fifteen individuals were interviewed from television stations in four Texas cities; two cities were large metropolitan areas with a population of 700,000 or greater, which were ranked in either Division 1 or Division 2 in media market size according to Texas Associated Press guidelines. The other two were smaller cities with a population of 250,000 or less, which were ranked in Division 4.

In qualitative research, it is important to purposefully sample the participants in order to obtain the most accurate information sought in regard to the research questions, as smaller sample sizes and more thoughtful questioning processes can lead to superior data collection (Morse, 2000). To this end, the researchers selected individuals from the previously mentioned Texas cities with whom rapport had already been established through previously formed relationships. By contacting individuals who had a previously established relationship with the researchers, greater rapport was formed during the interviews, allowing for more detailed collection of data.

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Each interview was based on a set of pre-determined questions, although additional questions were asked to provide clarification or expand on the subject. The responses for each question as well as the researcher's notes were collected and then coded using NVivo qualitative data analysis software. Responses were organized using open and axial coding.

To maintain trustworthiness, peer debriefing was used to ensure the researchers were being properly objective in their pursuit of answers to the research questions (Lincoln & Guba, 1985). In addition, referential adequacy, which deals with comparing data collected to recordings kept to check for accuracy, was employed to ensure that data were not improperly represented in the research process. To protect the participants' anonymity, each participant was assigned a pseudonym.

Findings

The participants included reporters, producers, news directors, anchors, meteorologists, or photographers. Despite their differing roles, each had insight regarding the creation of agricultural stories. In all, 15 news people were interviewed. Interviews were conducted one-on-one in an environment familiar to the participants, usually the newsroom or an office in the television station.

Findings Related to Research Question 1-- What is the frequency of agricultural stories presented on television stations in [State] as perceived by local reporters and news directors in both large and small television markets?

The findings indicate that agricultural stories are presented with a higher frequency in the smaller markets. In one small market, individuals reported presenting agricultural stories as often as once a week. In another small market area, individuals were slightly more conservative with their estimates than in the first, but still noted a regular frequency of agricultural stories. Molly said that, while coverage "depends on the season, [such as] if it's cotton season or dry weather," the station ran "per month, maybe about two to three stories."

In the larger markets, the participants claimed they ran agricultural stories infrequently, with fewer numerical estimates. Teddy said that he dealt with agricultural stories "almost never," while Will said that his station ran "next to none, or none." Robert said that "in the six months I've been here I can't think of one story," and added that he couldn't imagine "doing ag [stories] more than once a month."

Different topics made agricultural stories newsworthy between the two market sizes. Those working in smaller markets said the local agricultural industry was important and could play a significant role on the local economy, which increased the newsworthiness of agricultural stories at those stations. Molly said, "A lot of times it's just naturally occurring events that happen within our community, you know, (cotton) ginning season coming up so we'll do stories about that."

In larger markets, the participants said agricultural stories would need to have some kind of tie-in to the general urban population. Dave, talking about drought stories, said that in trying to relate a story about drought conditions and dying crops to the general population, he would consider economic factors, such as "does that mean the price of your mattress, your clothing is going to go up?" In discussing feature stories about agricultural topics such as livestock, Will said a story such as "look at the pretty animals" was, to him, "just kind of worthless."

Findings Related to Research Question 2-- What makes an agriculture story newsworthy to a local television station?

Different factors were important at different television stations regarding which stories were pre-

sented on the air. The two smaller television markets had more participants who stated that stories about local agricultural issues would be covered, such as information regarding how weather affects crop production or how a bad year for a local commodity could have a negative impact on the local economy. Ryan, who has a weekly agricultural news piece, said "a significant number of our viewers are related to agriculture and those that are not directly related to agriculture need to be made aware that they are (impacted by agriculture), even if they are not aware that they are."

Molly, who serves as a news anchor, said that weather and nationally oriented agricultural events such as Salmonella outbreaks were causes for news stories. However, she also said that "a lot of times it's just naturally occurring events that happen within our community."

Three individuals from one small market stated the agricultural industry was important to the local economy and that updates on agricultural issues were important due to how they impacted the average consumer in the area.

Participants in the two larger markets expressed viewpoints that many of their viewers were not directly involved with the agricultural industry. In these markets, the participants shared that agricultural stories were more likely to be presented on the station if they had a measurable impact on the average urban television viewer.

For example, Dave said the following:

> [We look at] how it will impact the majority of people, when someone says the drought for instance…how does that impact people here, when we can connect dying corn with people out in towns…It's big to us to draw a correlation between the farmers and ranchers and people in [the city] with three kids--if a farmer lost his crop, that's horrible, but if your mattress goes up by $20, that's going to impact more people and it gets more attention.

Another viewpoint expressed by participants in the larger markets was that agricultural stories were almost exclusively presented when the topic in question was somewhat negative. Will said:

> It's always connected to ag dying in a hurricane, some type of bacteria or virus or grain issue, but it's not going to be..."look at Elsie the cow, she's real pretty"... there's gonna be a negative context to it most of the time.

Individuals from larger markets said the agricultural-related stories that appeared on their stations were usually only involved with agriculture if the story was related to a tragedy, food safety scare, or other issue. Sometimes the economic impact of the agricultural industry might be discussed as such topics related to the general consumer living in the metropolitan area. One example of this is a comment from Will that "what it would take is something that hits the pocketbook."

Overall, economic impact was a trend across all stations, even those more likely to run feature pieces on agricultural industries.

Findings Related to Research Question 3-- How do members of television newsrooms view different sources related to agriculture?

Individuals within the same station or market type were found to have varying responses in relation to the sources they would choose to interview for a story. Participants were asked which sources they used for both background information and interview sources. Some said they used extension

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agents, while others had particular individuals they contacted. In smaller markets, participants listed a variety of sources they would use. Adrian said he "would find organizations or government agencies," while Ian said he would rely on "anything we can find on the Internet if it's something we don't have knowledge of in-house." For interview sources, individuals at larger market stations did not have specific sources they would go to for interviews.

In smaller markets, some individuals did have specific interview sources in mind and even had go-to sources. Molly said, "We like to talk to farmers a lot because they're the ones out in the field, they're the ones doing the work and they keep a pretty close eye on things and they know quite a bit."

When asked about specific sources, in general, most participants considered governmental sources (United States Department of Agriculture, Natural Resources Conservation Service, Extension Service, and the state's department of agriculture) to be credible; some participants said these sources might have a political viewpoint that somewhat impacted their credibility.

Commodity groups were, overall, considered a bit less favorable. Some participants said they would use them as a source but with caution as a commodity organization will only be positive about that particular commodity.

Special interest groups were considered biased by the majority of the participants. Participants said while these groups might have accurate information, their perceptions of the groups were less credible in general. However, the participants said they would use some information from the sources as long as a competing source could be found so that both sides of the story could be represented with differing viewpoints.

Conclusions and Recommendations

The findings overall showed that in larger markets, agricultural news was more infrequent, more impersonal, and more negative, while in smaller markets the news was more personalized, more frequent, and, while negative in some situations, also allowed for positive viewpoints and feature stories about the industry.

Participants from the large markets said issues involving health or food safety scares were more common. This aligns with the research by Ruth, Eubanks, and Telg (2005), which found that presenting agricultural issues to the media was very difficult, and agricultural issues in the news were often negative in nature.

In larger markets, participants noted that stories would need to be made relevant to their audience, usually financially or through a crisis situation such as a food safety scare. Large market reporters were not opposed to running ag-related stories, but they sometimes need to have the story and a list of possible interview sources presented to them (Irlbeck et al., 2010). The small market participants said agricultural stories aired with greater frequency, sometimes as often as once a week. In these markets, the local agriculture industry is more visible to the average resident, and thus these stories were more likely to appear on television. In addition, the stories in these markets were not always thought to be negative in nature, though coverage of negative events did occur. One participant from a large market said factors such as failing crops—which would be a top story in the small market—would be more likely to find their way onto the news if they could be related to the greater urban population through factors such as increased prices for clothing and food items. In the smaller markets, economic impacts also played a role, even though many of the viewers are not directly tied to agriculture. Even so, one small market participant said he always tries to make a connection back to the audience so that they can see how agricultural stories impact the average viewer.

These factors align with the concepts of gatekeeping (Shoemaker & Vos, 2009). The factors that determine whether a station will run a story depend on factors within the station itself, the surrounding community and area, and the stakeholders involved. In larger markets, the greater urban population, which has little direct connection to agriculture, has less personal reason to care about agricultural news. In these situations, agricultural news must be tailored to the interests and needs of the majority of the station's viewers. However, gatekeeping helps explain how and why agricultural stories are presented. A greater percentage of the community is aware of agriculture and its impact, stories are received more readily by viewers in the smaller markets, giving stations more leverage to present these stories in general, and certainly with much greater frequency than in the larger markets.

Source credibility has been found to be multi-faceted (Berlo, Lemert, & Mertz, 1970). This was exhibited strongly in the data. In a general sense, the perceptions of organizations varied widely from one participant to another; however, a few conclusions can be drawn overall. More official sources, such as governmental sources, were thought to have more credibility and a large majority of participants said they would use these sources for stories. Special interest groups, though regarded by many as biased, were thought to have possible factual information despite the perceived public image of the groups themselves. In this manner, a blanket assessment of the credibility of these sources is not possible--a conclusion that was already drawn in source credibility research due to the individual nature of credibility (Berlo, Lemert, & Mertz, 1970). However, previous research found that activist groups frequently are used as sources, at least on a national scale (Irlbeck et al., 2010).

A reporter's choice of sources for a particular story can influence the way the story is interpreted by viewers, and reporters may lose some control when they rely on sources for information simply due to the fact that reporters must work with what was obtained from those sources (Armstrong, 2006). By carefully monitoring accuracy and fairness, a reporter can ensure that a story is as accurate, unbiased, and fair as possible (White, 1996).

Recommendations for practitioners

Presenting any source of information to a reporter may be an intimidating task, especially if the reporters are unfamiliar with agriculture. However, Carpenter et al., (2006) said that reporters were more likely to choose sources that were already thought of as credible and reliable due to time constraints, which was corroborated by Owens (2008), who said that reporters were more likely to choose stories and sources that required less effort to obtain, largely due to deadlines. Hanson and Wearden (2004) and Armstrong (2006) said that acquaintanceship and positive relationships could make an impact on a reporter using a source in a story. Establishing relationships with reporters, producers, and news directors has been found to be very beneficial to many agricultural organizations.

Though individual credibility is difficult to predict, the overall perception of an organization could lead to its information being used if it is accessible. To that end, the accessibility of sources should be a primary concern. With reporters sometimes searching for the first source available, being the first source a reporter finds could be the difference between information being on the news or not. Some individuals said they search the Internet for information first, particularly if they are unfamiliar with the topic. The first credible source from this search may provide background information for their topic; therefore, utilizing search engine optimization tools may be helpful in getting in front of the media.

Sometimes the choice of a story may not depend on the credibility of the source or the accessibil-

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ity of the information, but instead on the pressures placed on reporters by their individual newsrooms or by society in general (Scheufele, 1999). With less need for agricultural information in larger cities, fewer agricultural stories are presented on the air. To that end, the presentation of agricultural stories in larger markets should be based on how the story impacts the greater urban population.

However, the importance to the larger audience is not to be discounted even in smaller markets. There is a greater awareness of agriculture among residents of the smaller markets, and though many residents understand agriculture, highly technical stories may not be well received by a large number of viewers. Even so, small television markets can be a great medium to get information out. It is important to note that the reporters may not be familiar with the topic, so a well-presented story pitch with suggestions for interview sources is crucial. Agricultural communicators should strive to present their information in a manner that shows how it is important to the community in general, including those not directly involved in agriculture. This may allow for greater adoption of agricultural stories and information from agricultural sources by the news media.

Recommendations for further research

Further research is needed in relation to how agricultural sources become visible to the media in general. This information is vital, primarily when considering that the most visible source may be the one that is chosen simply due to time constraints, deadlines, or familiarity (Carpenter, et al., 2006; Owens, 2008; Hanson & Wearden, 2004; Armstrong, 2006).

A quantitative research study that examined the interactions and factors presented in this study could aid in discovering connections between individual news agencies and their decisions to run agricultural stories, as well as their viewpoints on gatekeeping and source credibility. Such a study could also help measure the differences and similarities in the viewpoints of these individuals and the opinions held by television journalists in general, as well as the general public.

The factors that influence a station to run agricultural stories should also be examined. There is no real way to influence all the factors that govern every station's decision to run agricultural stories or choose particular sources, but by studying how and why some stations choose their sources and stories, we can begin to see the shape of the bigger picture that governs the interactions between agricultural sources and the news media.

About the Authors

Kori Barr is a master's graduate in Agricultural Communications, Department of Agricultural Education and Communications, Texas Tech University. Erica Irlbeck is an assistant professor of Agricultural Communications, Department of Agricultural Education and Communications, Texas Tech University. Courtney Meyers is an assistant professor of Agricultural Communications, Department of Agricultural Education and Communications, Texas Tech University. Todd Chambers is an associate professor of Electronic Media and Communications, Department of Electronic Media and Communications, Texas Tech University.

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Research

Advocacy in Agricultural Social Movements: Exploring Facebook as a Public Relations Communication Tool

Courtney Meyers, Erica Irlbeck, Mica Graybill-Leonard, and David Doerfert

Abstract

Public relations is the act of building and maintaining mutually beneficial relationships among organizations and people through the use of marketing and promoting strategies to build and maintain a successful public image. Currently, social media (including Facebook) are being adopted as a communication tool in public relations efforts to build relationships with different publics. Facebook is a popular social networking site that has the capability to offer a range of promotional tools and allows users to build relationships. The purpose of this study was to determine how administrators of Facebook groups are utilizing Facebook for promoting their agricultural advocacy campaigns. Eight semi-structured interviews were conducted with Facebook group administrators who actively contribute to the promotion of a cause by using the social networking site. Results indicated that administrators believe Facebook has been an effective form of communication and that people join their groups primarily to engage in conversations about agriculture and to build relationships with people who share similar interests. Overall, participants were pleased with the outcome of their Facebook groups and offered advice for future practitioners who want to use social media to promote agricultural social movements. The results of this study also led to the development of a model to illustrate how Facebook can be used to promote social movements in agriculture.

Keywords

social movement, social media, Facebook, interviews, online communication, public relations

Introduction

Definitions for advocacy and public relations both relate to actively promoting an issue or cause. Advocacy is taking a stand on issues that one is passionate about by offering opinions, suggestions, help, and support to the people in control of the situation in order to improve that situation (The Community Tool Box, 2010). Advocacy is a chosen action for change and involves working to gather support for a cause, raising money, and recruiting members of a community to be part of an organized event or program (McHale, 2004). Public relations efforts are used to build relationships with the public in order to raise awareness about an organization that promotes a product, service, or cause. The relationships created and maintained determine the success of those promotional efforts conducted on behalf of the organization (Cutlip, Center, & Broom, 1985).

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In a social movement, advocacy communication is the key tool for influencing perceptions of the public; communication is a central phenomenon that enables advocates to influence public opinion (McHale, 2004). According to Tarrow (1994), social movements are a philosophy that identifies values and goals, and provides a conceptual framework by which all experiences or events relate to the identified goals or values. The most important component of advocacy is having dedicated social movement activists who promote these causes.

Having the ability to communicate through various media is the primary tool for the success of social movement activists. Social movement activists are similar to public relations practitioners because they are both known as individuals with a common goal of promoting an issue or cause and attempting to implement change in a society. Social and political movement activists use communication to contribute to the construction of public reality, to mobilize members, to establish a collective identity, and to reach multiple audiences (McHale, 2004).

Many public relations practitioners use traditional methods of public relations because they have found them to be reliable and changing their methods of communication might disorganize their system (Grunig, 2009). Although public relations practitioners were once viewed as laggards when it came to adopting new communication channels, research suggests that practitioners are more willing to adopt new digitally based technologies (Eyrich, Padman, & Sweetster, 2008).

Social media sites provide many opportunities for public relations practitioners to communicate and build relationships with others and to carry out programs and campaigns (Grunig, 2009). Social media also create an environment for communities to form and for individuals to interact around particular organizations, which in turn create situations for relationship building and maintenance with publics (Edman, 2010), especially with those who adopt these digitally integrated tools in their everyday lives (Curtis et al., 2010). Relationships such as these can benefit the outcome of how people adopt messages, services, or products marketed by organizations (Rajagopalan & Subramani, 2003). "Greater interactivity promotes greater brand learning through better information assimilation and could help companies forge cognitive and emotional bonds with their brand users" (Dou & Krishnamurthy, 2007, p. 204).

Facebook is one of the most popular social mediums and social networking tools. According to Facebook statistics, there are currently more than 500 million users with active users having approximately 130 friends each (Facebook, 2010). Using Facebook has many benefits including meeting new people and building relationships, or learning more about people in one's offline community (Lampe, Ellison, & Steinfield, 2006).

Hoffman (2009) said social media use in agriculture has become "more of a business responsibility than a luxury" (para. 6). Through the use of social media tools, farmers, ranchers, and other agriculturalists are making a difference (Hoffman, 2009) because social media gives agriculturalists an opportunity to share their stories (Bradshaw, 2009). Farmers and ranchers alike can send messages or create posts in forums like Facebook or Twitter, which can instantly create awareness about agricultural topics and issues. "The value of that kind of Twitter or Facebook message cannot be quantified, but it's the type of reassurance, accountability, and responsiveness consumers are seeking and that they expect" (Hoffman, 2009, para. 8).

In recent years, several agricultural organizations or individuals involved in agriculture have created Facebook groups as a means of promoting their messages or causes as they relate to certain agricultural issues. The content of these groups vary greatly. Some are very limited in activity, while others are very active, including daily posts, encouraging member participation, asking for feedback, and posting news and other information that would be of interest to the members.

Theoretical Framework

This study is based on four key theories: intentional social change theory, social capital theory, computer mediated communication, and uses and gratifications theory. Intentional social change theory is focused on an individual's efforts to bring about a specific change (Sato, 2006). According to Sato (2006), the analysis of intentional social change contributes to the general understanding of society in at least three respects. First, the analysis offers a general framework for the study of social planning and social movements. Second, it can be instrumental in developing a theory of social change in general. Third, it provides a new perspective for unintended social consequences.

While intentional social change works specifically to bring about certain intentions or purposes, social capital theory encompasses the "norms and networks facilitating collective actions for mutual benefits" (Woolcock, 1998, p. 155). Social capital theory accepts the concept that social networks are valuable, because participants are expecting advantages by gaining personal relationships with others. People take part in social interactions and networking in order to gain profits for themselves. Lin (1999) listed three conclusions to explain why social relationships benefit the outcomes of those actions:

> 1) to assist with the flow of information; 2) social relationships may bring forth influence on agents who play a critical role in decision-making processes; and 3) social relationships may be recognized, by agents within an organization, as an individual's credentials, which may reflect how well people adapt to new people and surroundings in social situations. (p. 31)

A key component of the emerging technology of computer networks and social media is the computer mediated communication (CMC) theory. CMC directly relates to the use of computer networks to support interaction and communication between computer users (Jonassen, Davidson, Collins, Campbell, & Haag, 1995). CMC often affects users of this type of interaction by instigating societal and behavioral effects. The technologies used to facilitate CMC include discussions among computer users, electronic mail, and on-line databases. However, as new technologies emerge, so do new forms of CMC (Rominszowski & Mason, 1996). The significance of these types of communication is that they have the capabilities to support conversation and collaboration. Knowledge construction and the sharing of ideas and beliefs transpire when people explore issues, take and discuss positions, and reflect on and re-evaluate their positions (Jonassen et al., 1995).

The final theory utilized in this study is uses and gratifications theory. Katz, Blumler, and Gurevitch (1974) said that there has been an awareness of the gratifications that media provide since the beginning of empirical mass communication research. This theory specifically studies how people use media to fulfill goals and gratifications that they expect to fulfill by choosing to engage in particular media (Joinson, 2008). Uses and gratifications theory has been used to study different types of media, but most recently has been used for electronic media such as the Internet or social media. According to Park, Kee, and Valenzuela (2009), one way to explore individuals' reasoning for using Facebook is to apply the uses and gratifications theory because the theory has a helpful framework to understand Internet usage and users' needs. Park et al. (2009) found four primary needs for participating in groups within Facebook: socializing, entertainment, self-status seeking, and information. The researchers found that users joined groups for informational purposes and tended to be more interconnected to civic and political circumstances than they were to recreational purposes (Park et al., 2009). Raacke and Bonds-Raacke (2008) found that college students use social networking sites,

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particularly MySpace and Facebook, to build new relationships and maintain existing ones. Other gratifications received from using these sites were making new friendships, keeping in contact with old friends, and using Facebook as a marketing or promotional tool (Bonds & Bonds-Raacke, 2008).

Purpose and Objectives

Because social media tools are emerging communication technologies, the use of these tools has not been fully examined in regard to their contribution to agricultural communications. There also exists a need to identify best practices for using social media as public relations communication tools in agricultural advocacy. These areas of research were identified in the *National Research Agenda: American Association for Agricultural Education's Research Priority Areas for 2011-2015* (Doerfert, 2011) with Priority 2, specifically to determine "the potential of emerging social media technologies, message formats, and strategies in realizing a citizenry capable of making agriculture-related informed decisions" (p. 8). Therefore, the purpose of this study was to understand how Facebook group administrators advocate and promote agricultural social movements from a public relations standpoint. To achieve that purpose, the following research objectives were used:

1. Describe participants' opinions, attitudes, and beliefs of using Facebook as a communication channel in agricultural social movements.
2. Describe participants' perception of success for using Facebook for advocating agricultural social movements.
3. Describe participants' advice for best practices when using Facebook as a communication channel in agricultural social movements.

Methods & Procedures

To achieve the stated research purpose and objectives, this study used a descriptive, qualitative research design using in-depth interviews with eight Facebook group administrators. Qualitative research tends to seek breadth over depth and is more focused on learning about real life experiences as opposed to simply collecting direct evidence (Ambert, Adler, Adler, & Detzner, 1995). In-depth interviews are one of the most common forms of data collection in qualitative research. They are a successful way to get people to talk about their personal feelings, opinions, and experiences. It also allows the interviewer to gain insight as to how people interpret the world (Rubin & Rubin, 1995).

Selection of the participants of this study followed the strategy of purposeful sampling. Creswell (2007) described purposeful sampling as selecting "individuals and sites for study because they can purposefully inform an understanding of the research problem and central phenomenon in the study" (p. 125). The researchers set the following five criteria to select participants: (1) The group or page had at least 1,000 members; (2) The Facebook group or page was updated weekly; (3) The information provided was current at the time it was posted; (4) The Facebook administrators were involved in posting information at least once a week; and (5) The posts from the administrators communicated positive messages for agriculture.

The researchers conducted a search for Facebook groups that met the pre-set criteria by typing the following words into the Facebook search box: "agriculture," "farming," "ranching," and "animals." Once results from the search terms were displayed, the lead researcher evaluated each result's appropriateness for inclusion in the study and removed any entries that did not meet the established criteria to be selected.

The researchers contacted participants first by the Facebook e-mail messaging tool, then by an e-mail recruitment letter. When contacting initial participants, others were recommended using a snowball sampling technique to identify more potential participants that met the criteria. Once participants agreed to be interviewed, they provided their phone number in order to be contacted. The lead researcher first contacted participants to further explain the study and to set up a later time for the interview. All participants agreed using verbal consent before the actual interview took place.

A panel of experts familiar with the study's purpose and in-depth interviewing was chosen to review the semi-structured interview guide. Questions were developed in a way that results would depict a more thorough understanding of how Facebook is utilized to meet communication needs when disseminating information, particularly about agricultural issues. Participants in the study were not questioned on their personal Facebook pages, only on group pages in which they served as the administrator. A pilot test was conducted prior to beginning the interviews to determine the effectiveness of the questioning guide and to make sure the allotted time for the interview would be enough time for each question to be answered thoroughly.

Eight telephone interviews were conducted between September 6, 2010 and September 20, 2010 with respondents across the United States. A questioning guide was used for each interview to ensure consistency of questions and approximate duration of interview. A digital recording device was used to record the telephone interviews and additional notes were made by hand. Each interview was transcribed then imported into NVivo 8.0 to store and manage the data. Results were analyzed using the constant comparative method (Glaser & Strauss, 1967) to code themes and categories.

Findings

All participants were administrators of Facebook groups for social movements related to agriculture. The groups ranged from watchdog organizations against the Humane Society of the United States (HSUS) to groups that simply advocated in favor of agriculture, which was determined by both the group's content and mission. Either directly or indirectly, the participants were all involved with the agricultural industry. Three were employed by an agricultural organization and administered their Facebook groups as a part of their jobs. Five were agricultural producers who started and maintain their Facebook groups voluntarily. The participants' primary responsibilities for managing their Facebook groups included maintaining the page, updating new information frequently, and monitoring what was posted on the page.

In order to gain a better understanding of the study's participants, demographic questions asked age, gender, and geographical location. The results from these questions are displayed in Table 1 along with the mission and number of members in each Facebook group. Two administrators interviewed represented the same Facebook group.

Objective 1: Describe participants' opinions, attitudes, and beliefs of using Facebook as a communication channel in agricultural social movements.

The primary themes identified within this research objective were effectiveness of using Facebook as a communication channel, measuring the success of the Facebook groups, perceptions of why people joined the Facebook groups, and communicating with group members.

All participants agreed that Facebook had been effective in helping promote their movement or cause. Several participants agreed that a good testament to the effectiveness of how well their Facebook groups have been received was the increase in the number of followers. Jeremiah said:

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I believe that our Facebook group has been very effective. In fact, within the first week of having the group up, we had over 1,000 followers. Within a month, we were approaching five to six thousand. Then it just skyrocketed from there.

Table 1
Demographic Characteristics of Interviewed Facebook Group Administrators (N = 8)

Pseudonym	Age	Gender	Geographic Location	Mission of Facebook Group	Members in Group
Blake	30	Male	Ohio	A place to connect with farmers and ranchers	2,334
Dustin	21	Male	Arkansas	Created for people to share all aspects of agriculture	4,331
James	40	Male	California	A place for farmers and ranchers to connect with communities using social media	1,848
Jeremiah	22	Male	Missouri	Taking a stand against the agenda of the United States Humane Society	18,071
Jill*	25	Female	Washington D.C.	Watching practices of the United States Humane Society	167,550
Katherine	27	Female	Washington D.C.	Aim to improve media's perception of U.S. agriculture	1,631
Mark	33	Male	South Dakota	Shares the importance of telling agriculture's story	11,611
Shawn*	40	Male	Washington D.C.	Watching practices of the United States Humane Society	167,550

Note. Membership numbers were as of September 24, 2010.
*These administrators represent the same Facebook group

Participants also said they considered their Facebook groups to be effective because they created a central location where conversations could occur. Dustin said: "I can connect with people across the country that I never would have been able to meet otherwise. It's great to share ideas with people and to start a conversation that would never have occurred without Facebook."

When it comes to measuring success of Facebook, participants said that one way they determined success was by tracking the increase in members of the Facebook group. James commented: "If the Facebook page wasn't being well received by members, people would quit reading it and our mem-

bership would stop increasing. Neither of those have happened yet, so we must be doing something right." However, participants did make note that it is very difficult to get tangible measurements of just how successful Facebook groups are at making an impact on members. The participants also noted they did not set goals for their Facebook groups prior to launching them.

Participants said they thought people joined their Facebook groups to share their own story or to listen to others' stories. Several participants said they believed the majority of their users are producers or agriculturalists who want to share their stories. Jeremiah said, "Some people are involved in production agriculture, and they have a story to share, and they know how agriculture affects them and their everyday lives." Other participants said people joined their Facebook groups to read the provided stories. Dustin said:

> I think people who are not involved directly in agriculture want to see the stories that myself and others share. Those people really enjoy hearing the stories of others. If this is something you don't get to do every day, it may be interesting to get to hear people talk about that. I guess that's why people visit the page.

Participants also said they thought people joined their Facebook groups for the simple reason of loving agriculture, and wanting to show their pride by taking part in a movement that supports agriculture. Jeremiah said: "My hope is that people share the same desires and passions for defending agriculture, and so they join. There are people who love agriculture the way I do and want to defend it."

When asked what gratifications members were trying to fulfill by joining the Facebook groups, participants said the majority of people were trying to gain more information about how the agricultural industry was being affected by positive and negative perceptions in society. Another gratification that participants said they believe members are trying to fulfill is a need to advocate in favor of agriculture. When people join groups, participants said they have a need to voice their opinion, spread the word, and share their beliefs. People genuinely want to take part in the cause and have a need to do their part to stand up for what they believe is right. Mark said, "I think it sells itself at a certain point because it's something people are born into and feel passionate about. They want to help share their message."

Participants were asked if they could share the overall demographics of people who were involved in their Facebook groups. While they could not give specific numbers, the participants specified two main demographic groups. The first group was comprised of people who are involved in the agricultural industry in one way or another. The other group of members tends to be people who are not involved in agriculture, but may just want to learn more about the industry and help support what is happening.

Participants use several ways to communicate with their members on Facebook, but agreed they primarily post information on the group's wall, or main communications page. By posting on the group's wall, the information was more easily noticed by members. Participants also communicated with members by using the messaging tool, though this was not used as often as wall posts. By sending messages, it goes directly to the inbox of each member. This ensures that a member of the group is personally contacted by the administrator or someone in charge of the group. Dustin said, "I communicate primarily through messaging. That way I can constantly remind them that the group is there."

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Objective 2: Describe participants' perception of success for using Facebook for advocating agricultural social movements.

The themes identified within this research objective were Facebook's influence on awareness of the cause, evaluation of Facebook practices and goals, and plans for future use of Facebook. Participants unanimously agreed that Facebook had generated awareness about the message they were advocating and that it has been a successful communication tool in their social movements. Shawn said, "This is a new phenomenon. Facebook has typically generated a measuring tool for popularity of media. You can instantly see how many people are thinking like you are."

Evidence for this conclusion was primarily based upon membership increase or the constant comments being posted on the group's wall. Evidence was also based on the fact that information about agriculture is being spread and shared among other key players within the industry. Participants said they felt strongly about sharing information with others and having it continuously passed on. Jeremiah stated:

> I would say that the outcome has been very satisfying from my initial expectations of getting stories and articles out there to producers and consumers, about issues coming up in agriculture as well as general facts; it has been very successful, and has helped contribute to the cause.

Giving people a place to interact and respond to issues within the agricultural industry seemed to be one of the more effective practices used to promote the cause or movement. Though participants did not see any patterns or practices as ineffective, several participants did comment that it is important to not ignore attacks or negative comments on a Facebook page. Blake said, "You are not going to get a lot of respect because they will tell people you are biased and pushing your agenda. You have to be respectful."

When asked if the purpose for initially establishing the Facebook group had been achieved, participants shared that one of the main objectives was to spread the message and share as much information with people as possible. Several participants said they were most concerned with being able to speak to people through Facebook and providing as much valuable information as possible. Shawn said:

> I think the biggest goal I had was uniting people from different walks of life and for people with particular opinions to not feel that they are alone. And in that respect, though I couldn't determine how that goal was going to be reached, Facebook has turned out to be the solution.

Participants also commented that they do not have any particular goals established for the future, except to continue to see success in their Facebook groups. The Facebook groups continue to gain members, and participants expressed their optimism in seeing the growth continue. Participants said they were constantly striving to improve the success rate of their Facebook groups and to reach as many people as possible every day. Dustin said:

> I would say that my goals have been achieved for the most part. But I don't consider my goals reached. I am working toward obtaining those goals, but my work will never be completely fulfilled. However, it is in progress when it comes to inspiring people and creating a network in a conversation between consumers and agriculturalists.

After assessing the success and failures of the Facebook groups, participants had different responses to whether or not they would consider using Facebook again for promoting a different cause or movement. While several said yes, they would use Facebook again, others said it would depend on the cause or movement they were trying to promote, and whether or not Facebook would be effective at reaching the target audience. James said:

> Yes, it's very effective at reaching the public; more and more of the general public utilizes some form of social media. However, we can't forget the in person, one-on-one interaction with those in agriculture, because many of those in agriculture still don't participate in social media either because they are not comfortable with it, or more often than not, they don't have the technology to participate in social media.

Participants also indicated that, although Facebook was extremely successful in helping reach goals of spreading the word about their cause or movement, Facebook alone would not have been satisfactory. Several participants said the best way to utilize Facebook is to pair it with other communication tools to spread the message in every way possible. Dustin said:

> I feel like Facebook is effective if used along with the other applications and tools such as a blog or a Twitter page. Just having other ways of interacting is important. Facebook doesn't cover everyone, and each one has its advantages. I think a combination of different types of social media is best for promoting a cause like that.

Objective 3. Describe participants' advice for best practices when using Facebook as a communication channel in agricultural social movements.

The final question that participants were presented with asked them what advice they had to share with future agricultural communicators who might want to promote a cause or movement using Facebook. Participants said choosing a name for the Facebook group is very important, and could affect the overall success of the Facebook group. One participant said to use a generic-sounding name that still sets the group apart from others. The name should identify the group and the specific cause or movement being promoted. Whether selling something or promoting a movement or cause, the name of the Facebook group is a brand and it should be appropriate and pleasing.

After creating the Facebook group, the participants said they invited as many friends as possible. Jeremiah said to "have a cause that people are going to want to follow, ask as many people to follow as you can and then ask all of your friends to join and then to ask their friends to join."

Administrators can also invite people who they may not know, but think would be interested in joining by using the "friend finder" tool in Facebook. This is done by searching for people with common interests, then adding them to see if they want to be part of the group. When inviting people to join a group, it is also important to make sure to target the demographic audience is best suited for the group.

Participants said that, in order to be successful, it is important for Facebook groups to be as current and up-to-date as possible. Participants said they are constantly monitoring what is being posted, and that they are making posts as well. Jackson said: "If you are going to start an interactive page, make sure that you are interacting. Having a successful Facebook page hinges on involvement."

If the purpose of the Facebook group is to spread the social movement's message and share in-

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formation, participants said the group's administrators should be doing that as often as they have the opportunity. Jeremiah commented:

> Utilize every resource you have and promote your cause by advertising and messaging, as well as promoting through other media, such as a website or YouTube for example. Get the word out as much as possible, and make it something that makes people curious and want to be involved.

Participants also said that the majority of consumers and Facebook users are not necessarily going to care about a cause. They suggested making the page unique so it will stand out from other groups. Also, they recommended making people feel an urge to keep coming back to the page because they need the information being posted. Shawn said:

> Understand that 99.9% of people don't care about your cause. They don't care how wonderful the farmers are that bring chocolate milk to your kids at school. They simply do not care. If you want them to care and sympathize with your cause, you have to wrap it up in something they do care about.

After establishing a Facebook group and building membership, participants said it is important to use other forms of social media such as Twitter and blogs. These tools are inexpensive, if not free, so using them will only further promote the cause with limited expense. These social media tools can all be linked together to reach different groups of people who may not be connected to just one social media tool to communicate the Facebook group's message.

Participants also provided advice for agricultural communicators who may be skeptical about joining Facebook, or utilizing social media to promote an organization, cause, or movement. According to Katherine, people who are not utilizing social media as a communication and promotional tool are falling behind and are putting their organizations at a disadvantage. Blake said:

> Whether you are on social media or not, people are going to be talking about you and your cause. If you are there, you are giving them the face to associate with the cause, which is a huge advantage for yourself and consumers alike.

Conclusions, Discussion & Recommendations

Both advocacy and public relations are related to the promotion of an issue, cause or organization through relationship building (McHale, 2004; Cutlip et al., 1985). Within social movements, advocacy communication is essential to influence public perceptions through the use of a number of channels and tools (McHale, 2004) with more and more emphasis on the use of social media. As Grunig (2009) noted, social media provide public relations practitioners with more opportunities to build relationships and achieve communication goals. The purpose of this study was to understand how individuals use Facebook to advocate and promote agricultural social movements from a public relations standpoint.

Participants were satisfied with using Facebook as a communication tool in their agricultural social movements with all participants indicating the Facebook group served as an effective communication channel through which to advocate their causes. Participants said the Facebook group ef-

fectively increased awareness of their causes or movements, which they measured through an increase in followers and the amount of information posted to the group's wall. Although the participants did not establish goals prior to launching their Facebook groups, they were positive in their comments regarding the use of Facebook as a communication tool. Participants also did not have a definite understanding of the members in their groups, but categorized them broadly as those directly involved in agriculture and those who have an interest in agricultural issues. Participants said they believed their Facebook group members primarily joined to gather information or advocate on behalf of agriculture. The most effective method used to communicate with group members was to post information on the group's wall, but participants occasionally did use the messaging tool in Facebook.

Regarding the assessment of using Facebook to advocate their social movements in agriculture, participants said Facebook did increase awareness of their causes. They based this conclusion on the increase in members of the group and how often the information provided was shared with others. Participants mentioned that Facebook helped their causes because it gave people a place to share stories, post information, and make comments. Again, participants did not have any specific future goals for their Facebook groups except to continue to see membership increase. Many said they would use Facebook to promote another cause or movement, but this would often depend on the purpose of the cause and the target audience. Participants also recognized that the Facebook groups should not be the only communication tool utilized in a social movement. While participants were heavily involved in Facebook and its use as a promotion tool, they also used other social media tools to incorporate with Facebook, such as Twitter and blogs, to draw more people to the Facebook group as the main place to interact with people about the cause.

Finally, participants provided advice for other agricultural communicators who are considering using Facebook in their agricultural social movements. Successfully using Facebook starts with selecting a name for the group that is both distinctive and recognizable. Once the site is established, participants said group administrators need to increase the number of followers by inviting their friends, encouraging their friends to recommend the group, and using the "friend finder" tool in Facebook. These Facebook groups must provide current and interesting information to appear as a credible source and stimulate discussion among members. This would also lead to more information sharing as members of the group post links on their own Facebook pages to the resources provided on the group's wall. Facebook administrators must also be prepared to communicate with individuals who are not as passionate about the cause and those who oppose the purpose of the group.

Participants in this study did not emphasize the use of planning or establishing objectives and goals prior to launching the Facebook group. Ideally, this should be accomplished to help determine the effectiveness of the site, especially when compared to other communication tools. As more resources and advice are available for measuring the impact of social media tools, practitioners should place more importance on evaluating their online communication efforts.

The integration of the four theories that provided the theoretical framework for this study helped develop a framework to explain the use of Facebook as a communication tool for agricultural advocacy. Figure 1 displays this framework to help practitioners and communicators understand the fundamentals of using Facebook to promote social movements related to agricultural issues on both a corporate or individual level.

The framework for agricultural advocacy begins with intentional social change theory (Sato, 2006). This theory recognizes that action or change is attempting to be brought about. Intentional social change can be used by advocates to create change, to promote, to market, and for emotional

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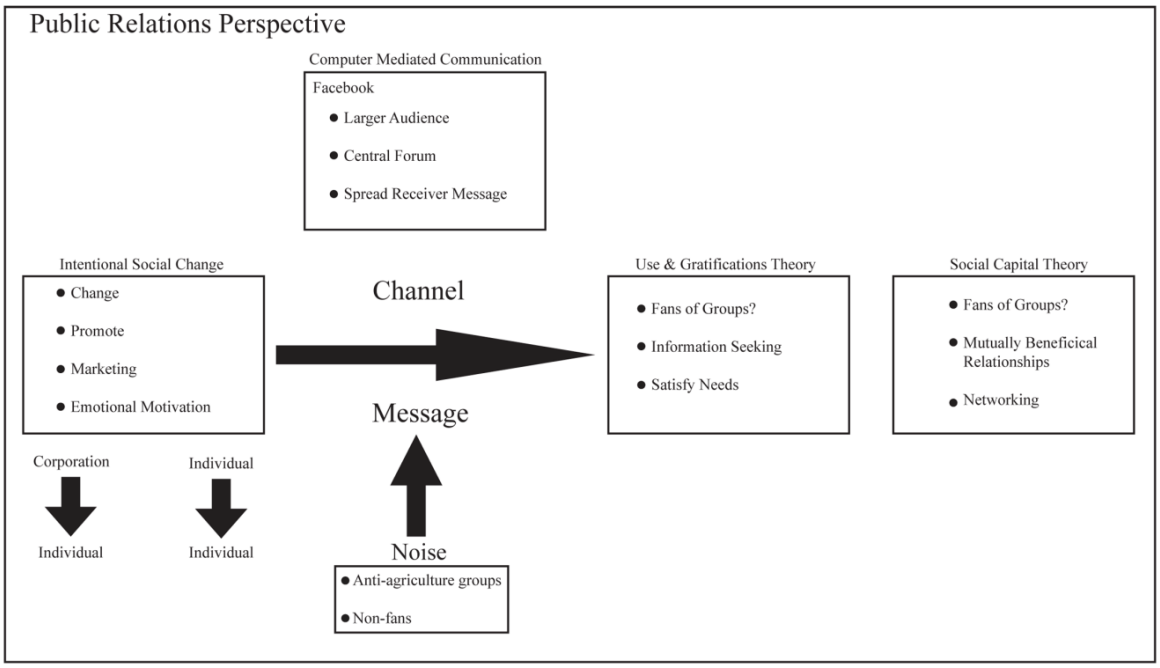

Figure 1. A Framework for Agricultural Advocacy Using Facebook

motivation. Many of the participants encouraged participation on the page and away from the page, and they said their group was a successful way to advocate for their cause. Although participants were notable to provide data that indicated their group was bringing a social change, they all indicated that positive change was taking place. As the message moves through the Facebook channel, computer-mediated communication (Jonassen et al., 1995) becomes a relevant theory because of Facebook's large audience, its ability to be a central forum for communication, and its capability to spread a message quickly and efficiently. Noise from non-agriculture Facebook groups and non-fans of the issues being promoted can interfere with transfer of the message. From the channel, uses and gratifications theory and social capital theory are addressed. Uses and gratifications theory (Katz et al., 1974) becomes relevant as administrators determine what Facebook members want and need. Finally, social capital theory (Woolcock, 1998) is a way for group members to build mutually beneficial relationships and to gain rewards by networking. All the components of this framework help advocates understand how to successfully use Facebook as a communication channel to inform people of an issue or movement from a public relations perspective.

The exploratory nature of this study provided a number of future research opportunities. Additional research should be conducted to examine why people join Facebook groups including their motivations, demographic characteristics, what they gain from the group, what improvements they would suggest for the group, and what impact the group's messages have on attitudes, opinions, and beliefs. It would be interesting to compare the effectiveness of social movement messages received through traditional communication channels with those received through social media. Finally, a quantitative study measuring the effectiveness of the Facebook groups on agricultural movements is necessary to determine if using Facebook is worth the investment of time and resources.

About the Authors

Courtney Meyers and Erica Irlbeck are assistant professors in agricultural communications at Texas Tech University. Mica Graybill-Leonard completed her master's degree in agricultural com-

munications at Texas Tech University in December 2010. She is currently a sales representative for Eli Lilly and Company. David Doerfert is a professor in agricultural communications at Texas Tech University.

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Research

Postsecondary Students' Reactions to Agricultural Documentaries: A Qualitative Analysis

Courtney Meyers, Erica Irlbeck, and Kelsey Fletcher

Abstract

Prior studies have found that television and movie portrayals of science and agriculture can influence attitudes and opinions toward the featured topic or issue. The prevalence of media in modern society emphasizes the need to better understand the possible impact representations of agriculture in entertainment media have on audience members' attitudes. The purpose of this study was to explore the influence two agricultural documentaries (*Food, Inc.* and *King Corn*) had on students' perceptions of agriculture. Students enrolled in two agricultural communications classes at a southwest university watched one documentary per class, and through reflective journaling, recorded their thoughts about the documentaries. These journals were then analyzed to determine dominant themes and key quotes. Overall, students stated they were upset and offended by the messages presented and sources used in each documentary. Although some students found both documentaries to contain interesting information, for the most part, they found the films to be one-sided and did not portray an accurate depiction of modern agricultural practices. The use of reflective journaling was effective because it allowed all students to provide their viewpoints in response to the films. It also allowed the students to practice writing response statements as some will work in public relations and may be expected to defend their industry should other negative documentaries about agriculture be produced in the future. Additional research should further examine the effectiveness of reflective journaling and gather student perceptions to other films or television shows that feature agriculture.

Keywords

agricultural documentaries, entertainment media, cultivation theory, reflective journaling, source credibility

Introduction/Literature Review

Agricultural science is a complex subject involving biology, chemistry, business, and politics. Combining those subjects creates a business that is difficult for many to understand, especially if one was not raised in or worked around agriculture. Because of these complexities and the separation of most Americans from production agriculture, many individuals' understanding of agriculture comes from information gleaned from the media—television, newspapers, magazines, Internet, movies and even documentary films (Retzinger, 2002). Previous research on agriculture in entertainment media

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found that agriculture was negatively portrayed (Ruth, Park & Lundy, 2005). However, Nisbet and Scheufele (2009) argued that media can help create a society that is more literate in the sciences, and communication about science should have diverse mediums—and this could include documentaries.

In recent years, two documentaries have received a great deal of attention for their representation of modern agriculture. Released in 2008, *Food, Inc.* is a documentary that presents a critical perspective on modern production agriculture in America. The film provides an in-depth examination of how today's production agriculture has changed in recent decades and how those changes affect consumers with a particular emphasis on the role of corporations in agricultural production (Kenner & Pearlstein, 2008). The documentary is divided into segments that describe different points in the food production chain such as poultry operations, processing plants, and grocery stores. The film features interviews with farmers, contract growers, food safety advocates, consumers, a labor union representative and organic producers. A reviewer for *The New York Times* described the film as "an informative, often infuriating activist documentary about the big business of feeding or, more to the political point, force-feeding, Americans all the junk that multinational corporate money can buy" (Dargin, 2009, para. 1). When *Food, Inc.* was nominated for an Oscar for best documentary, several farm organizations vocally opposed the film's recognition due to the critical way in which agriculture was represented (Clare, 2010).

Another agricultural documentary, *King Corn*, released in 2007, showcases the adventure of two eco-activists – Ian Cheney and Curt Ellis – as they move to a rural area in Iowa to grow an acre of corn, apply for government subsidies, select seed and herbicides, and follow their crop all the way to the marketplace (Woolf, 2007). During the movie, the filmmakers discuss the history of corn production in America and modern corn production practices. Through interviews with scientists, industry representatives, nutritionists, professors, and even the former Secretary of Agriculture, Earl Butz, the two filmmakers examine the prevalence of corn in the public's diet. Many controversial topics are discussed in the film including the use of high fructose corn syrup and the dependence of farmers on government subsidies.

In a review of *King Corn* for the *Minneapolis-St. Paul Star Tribune*, the reviewer said, "Nothing can scare me away from my beloved popcorn, but *King Corn* comes close" (Covert, 2007, para. 4). This film also encouraged strong reactions from those in the agricultural community. Nolz (2009) said, "The documentary craftily twisted and turned to make farmers and ranchers seem like ignorant, greedy barbarians" (para. 2). Gorrell (2008) commented: "I do fear that we, as producers, and small town residents, keep ignoring attacks and untruths, that movies like *King Corn* and people's perceptions of it, could be the 'ruination' of modern agriculture and rural America" (para. 34).

This research was conducted through the scope of cultivation theory, which states that people generally accept the worldview that is portrayed on television as truth (Gerbner, 1987). The theory claims that individuals will adapt their understanding of information based on what is seen on television, and as an individual watches more television, his or her ideas will align with the "television view" (McQuail, 2005, p. 552).

Television is a highly influential medium due to its drama combined with images and messages (Gerbner, Gross, Morgan & Signorielli, 1994; Williams, 2006). Gerbner et al. (1994) ventured to argue that television is, for most individuals, a primary source of daily information, indicating that television is a medium that should be used to communicate scientific and agricultural information. Gerbner (1987) said limited evidence exists that shows "exposure to science and technology through television entertainment appears to cultivate a generally less favorable orientation toward science . .

." (p. 112). Prior studies of how science is portrayed in movies have found the depictions are often false, exaggerated, and not credible. In a review of 33 movies about human cloning, Cormick (2006) found the portrayal of this type of biotechnology was accurate only about 25% of the time. Cloning was primarily presented in a negative way that focused on rogue and evil scientists or corporations. The study did not provide a correlation between the films and public attitudes about cloning, but public opinion polls in Australia (where the study took place) showed that the public does have strong negative opinions toward human cloning.

In a critical analysis of several films that feature agricultural plotlines, Retzinger (2002) found that the films did not help bridge "the gap between urban and rural citizens…these films construct a different gap, one that lies between an agrarian and pastoral myth and the commercialized, corporate forms of agriculture practiced in the United States" (p. 57). Retzinger did note that film may be an effective way to bridge this gap because it draws viewers who are willing to watch and learn.

Ruth, et al. (2005) studied the influence reality television programming (*The Simple Life*) had on undergraduate students' perceptions of agriculture. The study found viewers who had more agricultural knowledge were more critical of how agriculture was portrayed, while those with less knowledge or experience in agriculture were not as sensitive to the representation of agriculture (Ruth et al.). These same researchers further explored this phenomenon using a fictionalized representation of agriculture (from the movie *Napoleon Dynamite*) to determine what impact the example had on opinions, attitudes, or perceptions of the industry (Lundy, Ruth, & Park, 2007). This follow-up study supported the findings from the Ruth, et. al study, particularly that the portrayal of agriculture through negative stereotypes is influential in shaping attitudes and perceptions for those who have little or no direct experience with the industry (Lundy, et al.,).

The perception of sources used in communication efforts is an important concept in communication research because the source of messages can affect how message recipients perceive that message content and create meaning from the information provided (Stone, Singletary, & Richmond, 1999). "Source credibility is the amount of credibility (believability) attributed to a source of information (either a medium or an individual) by the receivers" (Bracken, 2006, p. 274). Communication researchers have explored credibility in both interpersonal communication (Hovland & Weiss, 1951-1952) and mass communication (Hovland, Janis, & Kelley, 1953). These studies and others (McCroskey, 1966; O'Keefe, 2002) defined credibility as the perception of "trustworthiness" and "expertise" message recipients have in a source. McCroskey identified two factors within the construct of source credibility: authoritativeness and character. The authoritativeness factor describes the message recipient's perception of how knowledgeable a source is for the message content area. This includes perceptions of how reliable, informed, and qualified the source is. The character factor describes the message recipient's perception of how trustworthy or honest the source is for the message content area (McCroskey).

Source credibility is especially relevant in persuasive communication because message recipients are "more likely to accept the message recommendations of sources that we perceive to be highly credible" (Baldwin, Perry, & Moffitt, 2004, p. 141). If message recipients have more positive perceptions of the source, then they are more likely to listen and respond to that message content. However, if message recipients have more negative perceptions of the source, they are less likely to listen and that information will be ignored (Stone, et al., 1999).

Purpose/Research Objectives

The purpose of this study was to explore postsecondary students' reactions to documentaries

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that discuss various topics in agriculture. The following research objectives were developed to help achieve this purpose.

1. Describe the demographic characteristics of the participating students.
2. Describe students' opinions about how agricultural practices were portrayed in the agricul tural documentaries.
3. Describe students' opinions of the sources used in the agricultural documentaries.
4. Describe students' reactions to the agricultural documentaries.

Methods/Procedures

The population for this study included 54 students (all over 18 years old) enrolled in two courses at Texas Tech University. One course (ACOM 3300 Communicating Agriculture to the Public) had 35 students enrolled while the other course (ACOM 3301 Video Production in Agriculture) had 19 students enrolled. In order to improve participation, the instructors offered 10 extra credit points for students' participation in completing the survey portion of the study. The journaling portion was a required class component; however, five students elected not to have their journals used in subsequent data analysis, which resulted in a total of 49 complete journals available for this study.

Food, Inc. and *King Corn* were the two movies selected to show in the classes because they are directly related to the topics discussed in both courses. Students in ACOM 3300 watched *Food, Inc.*, and explored how the film portrayed current topics and issues in agriculture. Students in ACOM 3301 watched *King Corn*, and discussed the depicted agricultural issues in addition to video techniques, shot angles, editing, interviewing, and interview source selection.

The researchers obtained the university's Institutional Review Board approval before collecting data for the study. All research occurred within the normal class time and did not require any additional time outside of the class period. First, students completed a survey instrument that measured critical thinking, attitudes toward agricultural topics, and demographics. Only the demographics portion of this instrument is reported in this paper. Each instrument had an identification number printed on it that corresponded to each student's ID number on the reflective journal that was used each class period. Second, students completed a reflective journaling exercise before, during, and after each of the movies. Table 1 provides the thought-provoking questions the instructor in each course asked to encourage student reflection and journaling before showing the movie, at several points during the movie, and once the movie had concluded. The reflective journal was passed out at the beginning of each class and collected at the end.

The use of a journal allowed students, in a non-intimidating environment, to record their reactions to the movies as they were being shown. Reflective journaling is useful for capturing a student's perspectives at a certain point in time. It is also a learning experience that may have an impact on the student long after the actual lesson ends (Boden, Cook, Lasker-Scott, Moore, & Shelton, 2007). Using reflective journaling in the classroom can be an extremely useful tool, but instructors must provide clear guidance for the students when journaling or the exercise could be viewed as busywork instead of aiding personal growth and professional development. The instructor should discuss expected length of the journal entries, encourage students to link experiences to journaling content, and introduce the topics to be addressed in the entries (Hubbs & Brand, 2010). In this study, students were asked to respond to several question prompts before, during, and after the movies to encourage additional reflection.

Table 1

Reflection Questions Asked Before, During, and After Viewing Agricultural Documentaries

Timing	Questions Asked
Before showing the movie	• What are the issues facing the agriculture industry today? • What is your opinion about how agriculture is portrayed in the media (news, movies, etc.)?
At several points during the movie	• What do you think about what was just shown/discussed in the video? • How does it make you feel? • What questions or concerns does it bring to mind? • What are your opinions of the sources being interviewed?
At the conclusion of the movie	• What is your reaction to the movie? • What questions do you still have regarding the documentary? • Did any of the topics in the movie create an emotional (angry, supportive, frustrated, happy, etc.) response from you? Explain. • What topics were not included that you think should have been? • What would you ask the film makers if you had a chance?

The reflective journals were transcribed in their entirety and each journal was saved as a separate Word document. Students were given unique pseudonyms to protect their identities when analyzing and reporting the results. Data were analyzed using open and axial coding. Using NVivo 8.0, a qualitative data analysis software, the researchers first made a wide inquiry, or open coding procedure, to categorize data (Berg, 2009). Following the open coding, the researchers axially coded the data, intensive coding around one category or open code.

Results/Findings

Objective 1: Describe the demographic characteristics of the participating students.

Forty-three students completed the demographic questionnaire prior to viewing the documentaries (five students were in both classes; one student did not complete the demographic questionnaire). Students were between 20 and 25 years old (M = 21.47, SD = 1.351) with a mode of 21 years old. The majority of students were female (n = 28, 65.1%) and agricultural communications majors (n = 34, 79.1%). All classifications were represented with one freshman (2.3%), eight sophomores (18.6%), 19 juniors (44.2%), and 15 seniors (34.9%). The majority of respondents reported that their families own agricultural property (n = 30, 69.8%) and that they lived on a ranch or farm (n = 25, 58.1%). Only one student (2.3%) had seen *King Corn* prior to it being shown in class, while four students (9.3%) had seen *Food, Inc.*

Objective 2: Describe students' opinions about how agricultural practices were portrayed in the agricultural documentaries.

The agricultural documentaries discussed a number of agricultural practices including concentrated animal feeding operations (CAFOs), processing plants, the use of pesticides and fertilizers,

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agricultural policies, and many more. The documentaries often presented the practices used in large-scale modern farming then provided information to cast these practices in a negative light. Many students questioned how the documentaries made modern agricultural production seem as if it was wrong. These students emphasized that in order to meet demand, production practices had to change from what was done 50 years ago. Terri said, "Society demands the food, but then criticizes how they got it. They have created this over the years with the idea of bigger, better, and faster."

Food, Inc. reported on the use of immigrant labor in meat processing plants. Students had very strong reactions to the use of immigrant workers, mostly from Mexico, in these factories. Some students voiced that these jobs should go to American citizens and not illegal immigrants. Linda explained, "There do not need to be illegals in the U.S. period. Those companies should give jobs to poor people in the U.S." Another student shared her strong opinion on this topic: "There's not an anti-immigrant movement. There's an anti-illegal immigrant movement! Why would you want them here? They're using our resources yet not paying taxes to this country!" Other students supported the use of immigrant labor. Chris said, "I am all for allowing immigrants to do these jobs. They are willing to do these jobs and start a new life here, we should let them."

Several students said the treatment of works in the featured processing plants was wrong while others disagreed. Mindy commented that this segment made her angry:

> They are all up in arms because the illegal immigrants are being jailed. The point is, these workers are illegal, and deserve to be deported. They don't pay taxes and they use our resources. They have no right to be treated fairly and to be in our country. It is not a bad thing to deport them.

King Corn focused on the specific changes made in corn production including the use of fertilizers, pesticides, and new crop varieties. Shauna said, "I think they are saying that corn is a huge industry that has evolved to produce the maximum yield. I don't think it's bad." Another student commented, "The tone is almost depressing. They make it seem like the increase in production is a bad thing."

Another area of emphasis in *King Corn* was the use of government subsidies for agricultural production. Many students said they did not know much about subsidies, but Gabrielle said: "Without these subsidies, growers would quit the business and ultimately, America's food source would collapse. Food prices would skyrocket and the economy would plummet." Students were supportive of government subsidies to sustain American agriculture. Margie said, "I think government payments are necessary. Some farms are producing food and fibers that help our country and sometimes farmers can't make enough to stay in business."

Several students noted that the documentaries emphasized CAFOs as detrimental to cattle and human health by linking the feedlot conditions to higher instances of *E. coli*. Marcie said, "I don't like the way they showed the feedlot. Not all cattle go to feedlots like that and not all have *E. coli*." Kelly noted that "meat must be produced rapidly because of the population's high demand, but that does not mean it shouldn't be made without care or concern for the people consuming it."

Overall, students commented that the documentaries were biased against modern agriculture. Several students noted that in order to meet the demands of a growing population, changes are necessary to improve the efficiency of modern agriculture. When watching *Food, Inc.*, James said, "I feel like they are against how farming is done today. It kind of frustrates me because the announcer probably has no idea what he is talking about." While viewing *King Corn*, Melissa commented:

> I think the growth in production is killing the small family farm and there is a grudge for that, so they are in turn trying to blame all the growth on corn, and it was a smart idea, but the growth is needed for the U.S. to survive.

Objective 3: Describe students' opinions of the sources used in the agricultural documentaries.

At several points during the documentaries, students were prompted to provide their opinions of the sources interviewed or cited in the films. Overall, students were skeptical of the sources used in both films and said they were one-sided or biased. However, some students did not agree and said certain sources in both films were trustworthy. Students who watched *Food, Inc.* had strong reactions to several of the sources interviewed including a natural/organic farmer, a low-income Hispanic family, a food safety advocate, and poultry farmers.

The natural/organic farmer, Joel Salatin, received the strongest comments from students who scoffed at his criticism of modern agricultural practices. Several students described him as "gross," "backwoods redneck," and "idiot." Students reacted particularly strongly to this segment because it showed him slaughtering chickens in an outdoor facility, which many students called "unsanitary." Beth said, "I laughed at this section because it shows a left field farmer and his incorrect procedures and expects other farmers to do the same." Chris explained:

> This source came off as being very bitter toward big farmer production and corporations in the beginning, then as the segment developed, he just came off as being very uneducated. He talked about being sanitary while handling a chicken carcass with no gloves or anything. He also made the claim that his operation is just as efficient as a large production plant. As someone who has been to a poultry production plant, there is no way that his claim is true.

The natural /organic farmer spoke about his production practices that emphasized how grass-fed livestock and more hands-on care will produce food that is healthier than other production practices. Craig said, "His plan might allow someone to feel better, but it is not efficient for the amount of food that is needed." Several other students agreed that his method of farming would not meet the public's food demands. However, some students did trust what this farmer had to say. James said:

> The source is very down to earth and believes in older methods of doing things which I believe is the right way to do things. They also do the chickens a old way which is good, but most people complain and say it is unsanitary. I think they should leave the man alone and let him do his thing.

To discuss the impacts of modern agriculture on the public's health (such as diabetes and obesity), *Food, Inc.* featured a low-income Hispanic family who chose to eat fast food because it was less expensive than buying vegetables from the grocery store. The father in the family was suffering from diabetes. Students said profiling this one family is not enough to explain the obesity epidemic or increase in diabetes among minority populations or youth. Vickie said, "the video was only about one family, and the way they eat. Not every family in America eats out all of the time, and not every family eats unhealthy." Other students commented that the family was unhealthy due to their food choices, not the agricultural industry. Kelly said:

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> The video obviously makes us feel sorry for the family, but they are not being smart about their food choices. They are making an excuse for obese people, blaming it on the industry, but it is a personal choice to consume those foods.

Barbara Kowalcyk was another source interviewed in *Food, Inc.* who encouraged a great deal of student feedback. She is a food safety advocate trying to pass Kevin's Law, which is named after her son who died from eating meat contaminated with *E. coli*. Students said interviewing her as a source on this topic was very effective and they had very intense comments after viewing her segment. Mindy said, "What was shown was very emotional. I think anyone watching the mother speak about her son's death would be affected." Other students conceded that while her story was upsetting, food-borne illnesses are a reality in our food system. Douglas explained:

> This segment was pretty sad. The lady was upset and determined for a reason. She lost her son to a mistake by a meat producer. But, everything can't be perfect, people die every day from mistakes made by others that are out of their control. It would be nice to have 100% safe meat, but that will never happen.

Near the beginning of *Food, Inc.*, the documentary featured two poultry farmers who worked for large corporations (Tyson and Perdue). Overall, students said these sources seemed disgruntled and were not very reliable. Larry commented that "…the lady had a grudge against the company that she worked for and clearly wanted to hurt the company because the company hurt her." Students suggested the documentary should have interviewed poultry producers who do not work for these large corporations or those who were not angry with the corporations for which they worked. Shelby said:

> I don't know about the farmers they have showed. The Kentucky guy sounded fake. The female says she is allergic from the meds because of what's fed to the chickens. Sounds fishy, she acts like it's oh-so-bad, then why does she do it? I feel that they still don't see the whole picture, not saying I know more, but they don't.

Food, Inc. provided information or sources who spoke against several large agribusinesses including Tyson, Perdue, Monsanto, and Smithfield. None of these companies appeared on camera to refute the accusations made against them. Several students noted that the companies should be more transparent with their practices. Pam said:

> The fact Monsanto declined to be interviewed just really makes me think even more that they are in the wrong. It's almost as if they are too cowardly to speak about their business – yet they aren't too cowardly to ruin farmers' lives?

Some students commented that they wanted to know the companies' responses to the allegations made in the film, but acknowledged that whatever they said could be used against them. Other students wanted to hear from farmers who supported Monsanto, Tyson, and the other companies mentioned. Craig said, "I do wonder though if there were any people that were not mad at Monsanto that they could of interviewed."

Students who watched *King Corn* made comments about several sources interviewed includ-

ing a corn farmer, a woman in a bar, the "corn-fed" guy, a rancher, a cab driver, and several doctors. The corn farmer students most commented about provided the acre of land for the filmmakers (Ian Cheney and Curt Ellis) to farm. He was viewed as helpful, knowledgeable, unbiased, and willing to teach. Kirsten said, "He knows more than the guys, so he now seems like the reliable good 'ol guy.' Showing his home and talking about generations make you see he values family and hard work." Margie said: "The farmer they chose, Chuck, has been interesting. He has done a good job explaining why they are going to do and making their project realistic."

Another source used in *King Corn* was someone students labeled as "lady in the bar." Sitting in a bar in the city where the documentary was shot, she provided her perspective on modern corn production practices and the impact on rural towns. Students had polar reactions to this source. Some students said she seemed uneducated and biased. Katelyn said: "The woman in the bar wasn't a very credible source. We had no idea how she related to the industry or how her feelings were formed." Denise said: "The woman didn't seem like the most likely source. She could've been influenced by her alcohol for all I know so the setting didn't seem appropriate; however what she said made sense." Other students said she was a good source because she had observed the farming practices she was commenting on. Laura said:

> I do believe that what the lady said is partially true. I have seen many small farmers quit farming just because they weren't making any money and had to get a job to make more money to support their family.

The source used in *King Corn* who had the most negative response was someone the students called "corn-fed" guy, an individual who drove a car with a license place that said "corn fed." This person was portrayed as a credible source, yet he was interviewed while he was sitting in his vehicle, and the documentary never explained his qualifications. Students commented frequently that this source had no credibility and was missing facts about the use of feedlots. Frances said: "I think corn-fed is a terrible source. He was ignorant on the actual facts of a feed yard and just threw in information or just opinion that he had heard somewhere." Another student said: "He is probably one of the worst sources to use! He looks like he hasn't showered in a month and probably has little education on the topic."

Another source used was Sue Jarrett, a cow/calf rancher in Colorado who discussed the use of feedlots and their reliance on corn as a feed source. Students said she was credible and good source because she talked about her experiences raising cattle. Valerie said, "I think that she was much more reliable source in that she raises and understands cattle and how they work." Other students acknowledged that she presented just one viewpoint and sometimes her opinions made feedlots sound negative. Kirsten said she was "a little confused; she's a rancher that sells her cattle to feedlots, but then acts like she is against them – pretty inconsistent source."

The final sources students commented about were a cab driver and medical doctors, who were featured in the same segment. The cab driver was suffering from diabetes while the doctors provided their expertise on the topic of diabetes and obesity. A few students were not convinced the cab driver was a reliable source and he only represented one person's experience. However, most students found these sources credible and trustworthy. Craig said:

> The people they used as sources were credible. The doctors had studied it and the cab driver

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had experienced what he was talking about obesity and the amount of sugar that we consume together and has become a major problem.

Objective 4. To describe students' overall reactions to the agricultural documentaries.

Overall, students had much stronger and more critical reactions to *Food, Inc.* when compared to their comments about *King Corn*. After viewing *Food, Inc.* several students said the movie was skewed or biased. They said only one side of the arguments had been presented and important information was missing. Mindy said: "The movie overall was very misleading…The public needs to be informed, but I feel this movie was hypocritical because it put the thoughts in people's heads, instead of encouraging them to find their own facts." Denise had strong opinions about *Food, Inc.* and explained, "I thought the overall documentary was liberal, radical, negative, and destructive to the ag industry." Jenna also commented, "They had some interesting facts, but parts could have been more educational and less opinionated."

The film discussed the production of organic foods and presented them as a healthier alternative than conventionally-produced food. Students disagreed that organic foods are the best option to improve the quality of food available due to their expense and low productivity. Beth said: "Organic foods are costly, so not everyone can afford them, and organic foods cannot and will not feed the world."

Several students did enjoy *Food, Inc.* and said they learned more about agricultural issues after viewing the film. These students said the movie made them think and provided advice for people wanting to make a change. Vickie commented: "*Food, Inc.* is a great documentary. It gives the audience a look on many different types of farming. It is a great eye-opener as to where our food actually comes from and what is included in it." Other students said the film was informative and enjoyable to watch. Kirsten explained her reaction to the film: "I had different feelings throughout – defense, pity, anger, confusion, but I though overall it was a proactive film with a good message…There are a lot of ag issues I never knew about before this movie."

Students who watched *King Corn* commented that the film provided viewers with a better understanding of what farmers do and how corn production has changed over time. Students commented that the film was informative and, overall, provided a positive depiction of modern agriculture. Dillon said, "I think the movie covered many aspects of the corn industry to give the full story." Frances explained: "I think this documentary showed how the life of a farmer is. I do think there were some parts in it that were not relevant, but in the whole, it produced the right information." Many students in the class did not have a good understanding of corn production prior to watching the documentary, but commented after watching the film that it helped them understand this type of production. Margie said:

> There is a lot more to producing a crop and it going through the food system that people don't think about. If people knew what was really going on and how they could change it, I think things would be a lot different.

One specific aspect of the film students provided feedback on was the role of corporate farms and their impact on smaller, family farms. Shauna said, "It seems like accurate information, but I hate that it is becoming so industrialized." Michelle provided a longer explanation to support her viewpoint:

Corporate farms are, in reality, what is needed. I think it is very sad that so many family farms are being shut down but, in the end, I think we need to look at it as what will feed the world. Some of these small farms don't produce enough. I wish that it didn't have to be that way, but at the same time, I don't want to starve, and neither do the farmers who are getting shut down.

Discussion/Conclusions and Recommendations

Nearly 80% of the participants were agricultural communications students and were either raised on a farm (58.1%) or their families owned agricultural property (69.8%). This background likely influenced the resulting opinions and perceptions students had of the information presented in the documentaries to be more sympathetic to the agricultural industry as a whole.

For the most part, students did not approve of how modern agricultural practices were presented in either movie, which is also what Ruth et al. (2005) and Lundy et al. (2007) found in their studies of how agriculture was portrayed in entertainment media. The participants noted that the documentaries were "critical," "biased," and lacking scientific facts when presenting the different agricultural practices. Many students discussed their own experiences in agriculture and how that differed from the portrayals presented in the movies. For example, many students said their families sold cattle to feedlots and they did not agree with how that practice was presented. Students who watched *King Corn* did note that they did not have as much exposure to this aspect of agriculture and they did not know corn was used in so many products. Students who watched *Food, Inc.* commented frequently on the role large companies had on modern agricultural practices. These comments ranged from accusing the companies of wrong-doing to more supportive feedback related to the jobs these companies provide.

Students in both classes disapproved of many of the interview sources used in *Food, Inc.* and *King Corn*. Students often questioned the legitimacy of the featured sources and even suggested additional individuals who should have been interviewed. As prior research has found (Hovland, et. al, 1953; Hovland & Weiss, 1951-1952), source credibility influences the message recipient's acceptance of the information being communicated. Those receiving the information are more likely to accept the messages if the sources are perceived as more credible (Baldwin, et. al, 2004) while information from sources that are negatively perceived will likely be ignored (Stone, et al., 1999). In each documentary, students found a source particularly bothersome. In *Food, Inc.*, this was Joel Salatin, the organic/natural producer. In *King Corn*, this source was nicknamed "corn-fed" because these words were on his custom license plate shown while interviewing him in the documentary. Students were especially harsh in their judgments of what these two individuals had to say.

In both movies, sources were used to explain and describe the increase in obesity and diabetes in the United States. The source used in *Food, Inc.*, a low-income Hispanic family, received much harsher criticism than the cab driver featured in *King Corn*. This difference in perceptions could be attributed to how each of these sources described their health issues. The cab driver in *King Corn* had lost a great deal of weight by eating healthier while the family in *Food, Inc.* was shown eating at a fast food restaurant, then discussing their health issues.

Gerbner et al. (1994) argued television is highly influential because of the combination of images and messages, including interview sources. Some students were concerned that the non-agricultural audience could be influenced by the interview sources in both documentaries because these sources may not have had a complete understanding of the agricultural industry. Many students did comment that the films should have used less biased sources and more sources who represent modern

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agricultural interests, including the U.S. Department of Agriculture and the agricultural companies mentioned in the film that declined to be interviewed (Monsanto, Tyson, and Smithfield).

Overall, students had very strong reactions to both documentaries. Many students expressed a tone of anger and took personal offense to some of the messages presented in the documentaries. Other students did note that they learned more about the corporate involvement in agricultural production after watching *Food, Inc.* Students who watched *King Corn* reported that they learned more about the realities of corn production – chemicals, transportation, storage, farm subsidies, and different uses of corn for humans and livestock. The documentaries exposed students to the complexities of modern agriculture and made them realize that the way of life many of them enjoyed growing up is open to criticism and censure. These films encouraged students to imagine how non-agricultural audiences might react to the information, which is good practice for future communicators as they work to provide facts or information to represent their organizations.

Several recommendations for agricultural communications practitioners can be made from this study. Individuals who work in the agricultural industry need to be receptive to watching or reading materials that may counter their own, or their organizations', viewpoints. Nolz (2009) asked, "When are we going to create an accurate documentary to tell the world the REAL agriculture story?" (para. 4). Agricultural organizations and companies should be proactive and develop high-quality communication materials to tell agriculture's story because, as Retzinger (2002) noted, many individuals' understanding of agriculture comes from information gleaned from the media. Agricultural communications practitioners need to be prepared to counter accusations or false information about their organizations and the industry as a whole. This requires strategic thinking, issues management, and futuristic thinking, which all require time and effort. Although Monsanto did not comment on camera for *Food, Inc.*, the company did develop a website to address several points raised in the film (see Monsanto, 2010).

To help students recognize the variety of opinions about the agricultural industry, college instructors should incorporate these films, and other movies that depict agricultural situations, into their agricultural communications curriculum. Integrating movies such as these in the curriculum could allow students to begin practicing how to respond to counter-arguments or negative portrayals as most people's connection (or lack thereof) to agriculture is not going to strengthen in the future. Another useful activity would be for students to collect information they said was missing or lacking from the documentaries then discuss how that information should be presented and distributed.

This study utilized reflective journaling for students to write their perceptions and opinions about the documentaries shown in each class. The journaling exercise was effective in allowing students to record their comments as they watched the films instead of trying to remember key points for later discussion. The journals allowed each student's voice to be heard, albeit in written format. Students who were hesitant or uncomfortable speaking in class were very insightful and provided a wealth of comments when writing their viewpoints in the journals. A future study could evaluate the reflective journaling process to determine what could improve the quality or thoroughness of students' comments.

Additional quantitative data were collected as a part of this study that will be analyzed for future research. This data can then be connected to the qualitative comments to provide a more in-depth explanation for students' opinions and perceptions. One question that was not asked was political affiliation, which would have been an interested characteristic for comparison. Another suggestion for future research would be to show these documentaries to non-agricultural audiences to determine

what impact the films may have on attitudes, opinions, and intentions to change behavior. This study could also be repeated with other documentaries or feature films that address agricultural topics and situations.

About the Authors

Courtney Meyers and Erica Irlbeck are both assistant professors in agricultural communications at Texas Tech University. Kelsey Fletcher is a graduate student pursuing a master's degree in agricultural communications at Texas Tech University.

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