

Students' Perceptions of an Agricultural Communication Lesson and an Experiential Learning Activity in Secondary Agricultural Education Classrooms

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Abstract

Agricultural communications (ACOM) curriculum is important to prepare students for diverse, agriculturally-related careers. Due to lack of secondary ACOM curriculum, postsecondary initiatives have focused on instructional material development. This descriptive study examined secondary agriculture education students' perceptions of ACOM curriculum. Researchers' sought to determine how students received a writing lesson taught through traditional classroom delivery with an experiential activity. Students (N = 630) from nine agricultural science programs in Arkansas completed a four-part instrument at the conclusion of the lesson. Based on the findings of this sample, the majority (52.7%) of students enrolled in agricultural science courses were unfamiliar with ACOM. The majority (67%) of students enjoyed the writing lesson and would not change anything about the delivery or activity. For future instructional delivery, participants preferred to learn via hands-on (75.9%), group (64.1%), or project (42.1%) activities. Most students were not aware of the opportunities for careers associated with ACOM (52.7%), but were most interested in learning more about design (40.8%), multimedia (31%), writing (21.3%) and careers (18.3%). Students enrolled in agricultural science courses enjoyed experiential learning activities when used to complement traditional teaching delivery. Although, ACOM curriculum is not in place in Arkansas high schools, 42.1% of students were excited and interested in learning about the various aspects of this growing field.

Introduction

Today's youth are digital natives. They are typically proficient and enjoy learning about and with visual and communication technologies (Margaryan et al., 2011). These individuals are today's students in secondary

and postsecondary schools and we must find ways to teach and engage them with the technology they are already inclined to use. Pennington (2012) noted that *"postsecondary and secondary education today is a dynamic educational environment as new electronic technologies and their educational potential emerge"* (p. 2). The use of emerging technology in secondary school programs allows for the acquisition of new knowledge, and in some students induces curiosity and a need for learning (Edgar, 2012). Edward Thorndike applied scientific psychology toward learning, thus altering the view of how learning occurs (Wiburg, 2003). Thorndike (as cited in Wiburg, 2003) postulated that students, when presented with innovative or new items, create a psychological impact resulting in a defined need to understand the information. Rosenshine and Furst (1971) posited that with clarity and variability, students would be more inclined to learn. Because of this, educators must account for students' thoughts, beliefs and feelings when teaching (Bigge and Shermis, 1999; Gredler, 2005; Schunk, 2004).

The Vocational Education Act of 1963 expressed vocational education as courses used for training students for paid or unpaid employment (Hayward, 1993). Additionally, the act recognizes agricultural education courses as preparing individuals for college studies. This preparation for the workforce can be realized through modified teaching methods that include reflective learning and hands-on engagement. When teachers incorporate experiential learning into their lessons students acquire real-world knowledge that may assist them in a successful career in an agriculture-related field upon finishing his or her education. Similarly, constructivism is a relatively recent term used to represent a collection of theories, including generative learning (Wittrock, 1990), discovery learning (Bruner, 1961) and situated learning

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(Brown et al., 1991), whose premise describes learning based on constructed experiences. This innovative curriculum, which includes differentiated teaching and learning processes, motivates teachers and students to learn and allows opportunities to gain knowledge using state-of-the-art technology.

“As agricultural education enters the twenty first century, [education and agriculture] must change with emerging trends in society and the agricultural industry” (Talbert et al., 2005, p. 61).

Bailey-Evans (1994) suggested that with increasing accessibility of technology and as society becomes more disconnected from the farm, communication becomes vital to the promotion of agriculture. The lack of knowledge about agriculture and the advancement of business-oriented industry in agriculture have produced a need for universities to include agricultural communications (ACOM) curriculum in the traditional agricultural education programs (Birkenholz and Craven, 1996). The promotion of agriculture is imperative to the existence of the industry and remains a need at the forefront of agricultural education. ACOM curriculum should be included when preparing students for diverse agriculturally-related careers.

ACOM offers career choices for students wanting to work in an agricultural-related field, *“because a large percentage of the population lacks agricultural understanding, it’s important for agricultural communicators to provide timely, accurate information on current issues and events”* (Hartenstein, 2002, p. 1). Agricultural communicators are uniquely prepared to promote agriculture because they are familiar with all aspects of the industry. They also have access to valuable resources: Cooperative state, research, education and extension service personnel; farmers and ranchers; veterinarians; and agriculture, food and natural resource scientists.

Currently, minimal ACOM curriculum exists in high schools. However, in 2000 the National FFA Organization added ACOM as an official Career Development Event (CDE) area, creating a national contest for students interested in ACOM as a future career path. According to the National FFA Organization (2002), FFA members who are interested in pursuing a career in agricultural communications and journalism or who are looking to build additional communications skills are encouraged to participate in the ACOM CDE providing an educational experience upon which to build. Texas and Oklahoma are currently the only states with curriculum to support the ACOM CDE, and the National FFA CDE superintendent has expressed the need for development of training materials that could be used by agriculture teachers nationally to prepare their students for the CDE (Erica Irlbeck, personal communication, October 14, 2012). The purpose of this study was to determine teaching style preference by secondary agricultural students, determine interest in ACOM curriculum topics and assess students desire to pursue degrees in ACOM after high school graduation.

Theoretical Framework

The theoretical framework for this study reflects student learning styles. Learning is an active process where the learner uses sensory involvement and constructs based on prior learning and experiences (Hein, 1991). Many researchers argue that education comes from experience; however, according to Dewey (1938), not all experiences are educative. Kolb (1984) proposed a theory of experiential learning that involved four principal stages: concrete experiences (CE), reflective observation (RO), abstract conceptualization (AC) and active experimentation (AE). These teaching methods allow students to reach application, analysis, synthesis and evaluation, which are higher tiers in Bloom’s Taxonomy of learning (Bloom et al., 1956). “Learners are expected to understand the applications they are learning” (Edgar, 2012, p. 7), and should be able to do more than simply act on memorization. In a study conducted by Frazee et al. (2011) ACOM was introduced with activities emphasizing leadership, photography, writing, video production and Web design to broaden students’ perspectives of career opportunities in agriculture. Researchers concluded that hands-on experiences affected students’ identification of careers they could pursue with an agricultural science degree.

The concept of experiential learning is a time-honored approach in the practice of adult education (Miettinen, 2000). The history of experiential learning dates back to the 4th century B.C. when Aristotle stated “...using the language of knowledge is no proof that they possess it” (University of California Science, Technology and Environmental Literacy Workgroup, n.d., p. 2). The same concept applies today as employers begin to place more value in experience instead of grade point averages when in pursuit of employees.

Etling (1993) described three types of learning: traditional, performance-based and experiential, with experiential being the least structured of the three. It is difficult to classify secondary agricultural education programs into a category because it should be a collaboration of all three. *“When students’ everyday experiences are interpreted and augmented by their peers or parents this is typical of informal education”* (Etling, 1993, p. 3). In a study by Robinson et al. (2007), eight employability skill constructs were deemed a high need for curriculum enrichment. These included: (1) problem-solving and analytics, (2) decision making, (3) organization and time management, (4) risk taking, (5) listening, (6) creativity, innovation and change, (7) lifelong learning and (8) motivation.

Felder and Silverman (1988) recommended connecting student experiences to the course material, creating a balance between concrete information, abstract concepts and practical problem solving methods; using illustration to reinforce intuitive patterns; the integration of visual, oral and written explanations; and the incorporation of computer technology to enhance the information dissemination to students. Felder and Silverman (1988) also advised allowing students enough

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time to answer questions during lecture and cognitive activities, providing opportunities for collaborative learning, and rewarding students for participation and creativity to enhance student perceptions of information. A study conducted by Javenkowski and Schmidt (2000) concluded that the effectiveness of classroom instruction may be increased by “employing multiple teaching strategies to accommodate all learning styles exhibited by a group of students” (p. 28).

There is a need to determine secondary students' preferred learning methods to tailor ACOM curriculum to better meet the needs of students and the agricultural industry. This study assessed secondary agricultural education students' perceptions about ACOM curriculum through traditional delivery (lecture) with an experiential learning activity. Students' preferred learning styles were assessed based on an ACOM lesson to determine student knowledge gained.

Methods

During the fall 2012 semester, a lesson from the proposed ACOM curriculum for secondary agricultural science programs was tested in high schools across Arkansas. All secondary agriculture instructors in Arkansas were contacted via a listserv and given the opportunity to have an ACOM lesson taught in their classrooms on a Friday of their choosing from September through November 2012. There were nine Fridays available and scheduling was first-come-first served.

A lesson from the writing module of the curriculum was chosen to be piloted in the participating classrooms. The lesson, titled “Writing a Lead” was introduced with a Prezi presentation that allowed students to actively participate in the discussion, providing abstract conceptualization and concrete experiences of the concepts (Kolb, 1984). The 15-minute lecture briefly touched on topics such as: (a) inverted pyramid style, (b) the who, what, when, where, why and how (5 W's and H) of a news article, (c) Associated Press (AP) style, (d) interviewing skills and (e) how to write a news lead. At the conclusion of the Prezi the researcher reviewed students on what they had learned and allowed them enough time to ask question, as well as rewarded students for participation and creativity as advised by Felder and Silverman (1988). The researcher then asked participants to split into partners for the activity.

The activity portion of the lesson, titled “You be the Reporter” required the students to interact with each other while reinforcing the skills they had just learned through active experimentation (Kolb, 1984). Each student was given a list of bulleted facts pertaining to a newsworthy event. There were six newsworthy events, allowing multiple students to write about the same topics. Students were instructed to work with their partner to interview each other and identify the 5W's and H listed on their event cards. They were then to take those facts and arrange them, in order of importance, into a lead paragraph for a news article. Once students completed the activity they shared their lead paragraphs with the

rest of the classroom. The students engaged in reflective observation as they discussed the good aspects of each lead and gave suggestions on how to make each one stronger (Kolb, 1984). This exercise not only tested for content learned during the lecture, but also allowed the students to engage in experiential learning and develop the eight employability skill constructs (Kolb, 1984; Robinson et al., 2007).

The researcher administered the instrument, after the activity, during the last ten minutes of each class period. Prior to distributing the instrument, the researcher explained the purpose of the study and explained to the students that participation was voluntary and that all responses would be anonymous. The sample for this study consisted of students from nine agricultural secondary education programs across the Arkansas (N = 630). The response rate, for the secondary agricultural science students who participated in the lesson was 100%.

The student survey contained four parts. Part I focused on prior knowledge held by students of ACOM as well as perceptions of the writing lesson completed before completing the instrument (using a 5 point Likert-type scale where 1 = “Strongly Disagree” and 5 = “Strongly Agree”, multiple choice and yes/no questions). Part II listed ACOM topics and asked respondents to indicate which areas they would like to learn about. Part III assessed student interest in ACOM as a whole. Part IV focused on participant demographic characteristics including grade level, number of agriculture courses the student has been enrolled in and if they are interested in a career in ACOM.

A panel of faculty members (from agricultural communications and education) examined the instrument and judged it to possess face and content validity. Cronbach's Alpha was used to test the reliability of the instrument. The Cronbach's Alpha value for the instrument was 0.94, 0.92 and 0.96 for Part I, II and III, respectively. The reliability of the demographics was not assessed; according to Salant and Dillman (1994), responses to non-sensitive demographic items “are subject to little measurement error” (p. 87). Data were analyzed using descriptive statistics.

Results and Findings

Of the 603 students from nine agriculture science programs in Arkansas who participated, 63.7% were male and 34.8% were female with 1.5% not specifying a gender. Representing the sample group, 480 self-identified as Caucasian (76.2%), 48 as Hispanic (7.6%), 32 as African American (5.1%), 15 as American Indian (2.4%) and three as Asian (0.5%). Eleven reported being of “other” race (1.7%) and 14 did not specify an ethnicity (6.5%).

The participants (N = 603) were asked how many agriculture classes they have taken including the current semester. Forty-four students reported none. There were 408 students who reported having 1 to 2 courses (64.8%). Of the remaining participants, 123 reported

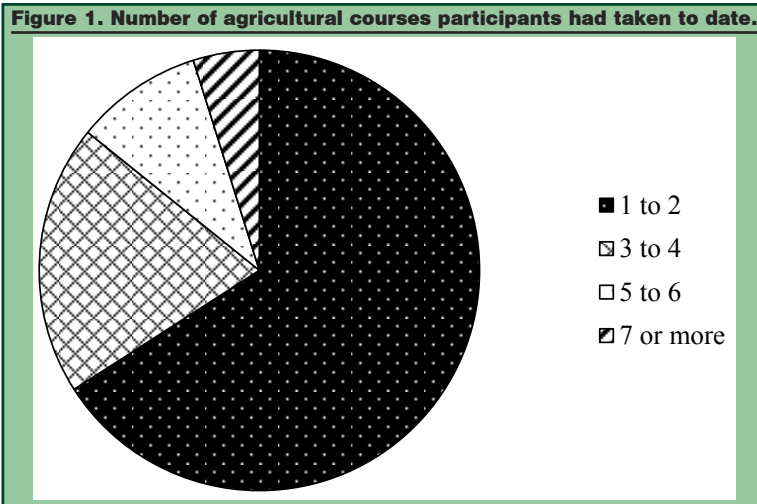


Table 1. Participant perceived agreement towards "Writing a Lead" (N = 630).

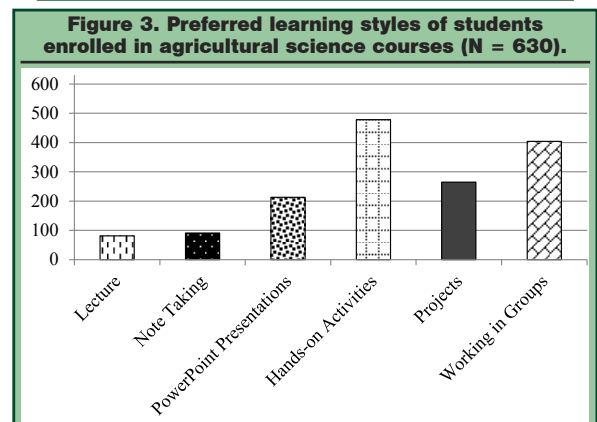
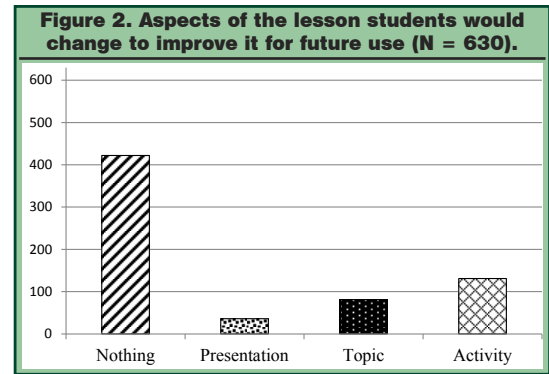
Statement	n	M	SD
I had fun participating in the lesson	624	4	1.01
I learned a new writing skill from the lesson	18	3.79	1.22
I understand the concepts in the lesson	21	4.23	0.95
I would like to learn more about agricultural communications	13	3.42	1.23

Note. Responses based on a 5-point Likert-type scale with 1 = Strongly Disagree to 5 = Strongly Agree.

3 to 4 classes (19.5%), 58 reported 5 to 6 (9.2%) and 30 students reported seven or more agriculture courses (4.8%). Participants reported if they could see themselves working in an agricultural career after graduating from high school; 13.8% declared definitely yes (n = 87), 20.5% stated probably yes (n = 129), 32.7% were unsure (n = 206), 20.2% said probably not (n = 128) and 11.1% stated definitely not (n = 70). Refer to Figure 1 for a visual representation of the number of agriculture classes the participants have taken.

To begin, participants were asked if they were familiar with ACOM before the writing lesson was delivered, 43.5% stated "yes" they were familiar (n = 274) and 52.7% stated they were not (n = 332). The next section of the instrument asked questions pertaining to the presented lesson as well as the student's interest in learning more about ACOM, refer to Table 1. Participants somewhat agreed that they had fun participating in the lesson (M = 4.00, SD = 1.01). Participant responses ranged from undecided to somewhat agree when asked if they learned a new writing skill from the lesson (M = 3.79, SD = 1.22). Students understood the concepts in the lesson (M = 4.23, SD = .95) and ranged from undecided to somewhat agree they would like to learn more about ACOM (M = 3.42, SD = 1.23).

When participants were asked what they would change about the lesson to improve it for other students, 67% indicated they would not change anything about the lesson. However, 20.8% of the participants felt the activity should be improved. The percentages for this section equal more than 100% because the participants were permitted to check more than one option. Figure 2 represents what the participants would change about the lesson to improve it for future students.

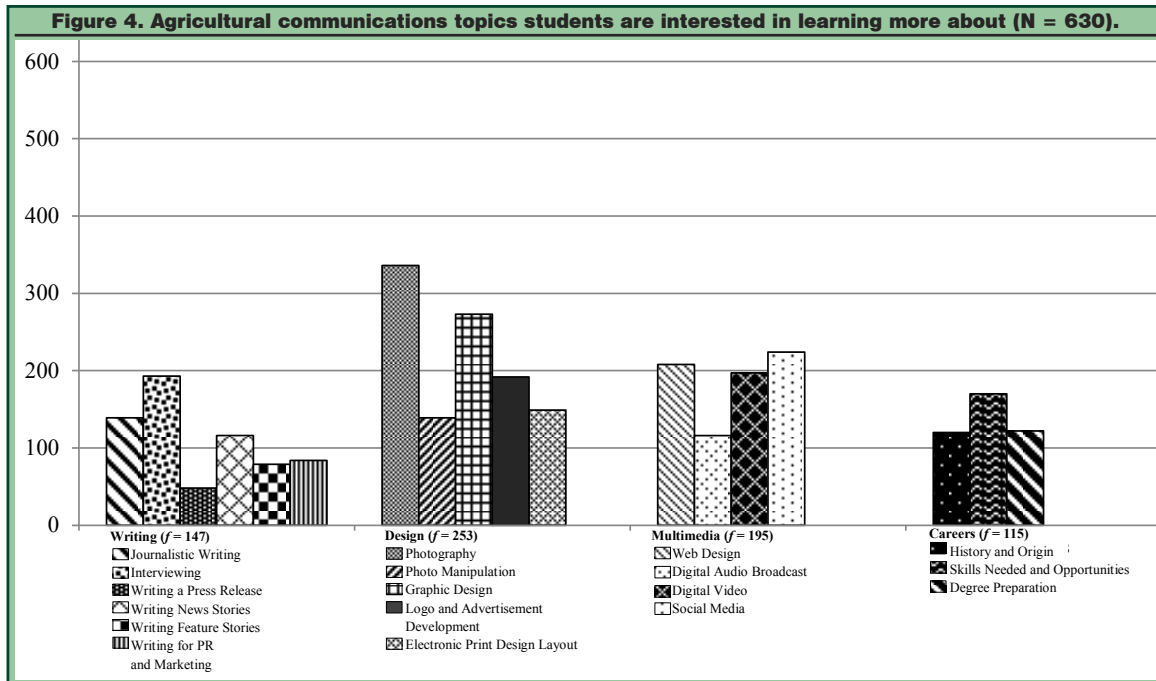


The participants were asked what type of learning they preferred next. Out of the sample group, 75.9% indicated they liked hands-on activities, 64.1% favored working in groups and 42.1% enjoyed projects. A smaller percentages of students preferred PowerPoint presentations (33.8%), note taking (14.4%) and lecture based lessons (12.9%). The percentages for this section equal more than 100% because the participants were permitted to check more than one option. Refer to Figure 3 for the preferred type of learning for the participants.

For the next section of the instrument, students were asked to identify the specific aspects of ACOM they were interested in learning more about. Overall, by module, students were most interested in learning about elements of design (40.8%), with multimedia (31%), writing (23.3%) and careers (18.3%) following. The percentages for this section equal more than 100% because the participants were permitted to check more than one option.

Within the writing module the highest percentages of student interests were in interviewing (30.6%), journalistic writing (22.1%) and news stories (18.4%). The design module drew the most interest from the students, with 52.5% wanting to learn more about photography. The students expressed interest in graphic design (42.5%) as well. With respect to the multimedia module, social media (35.6%), web design (33%) and digital video production (31.3%) all sparked comparable interest with the participating students. The careers module was the least preferred, by the students, of the four modules. There was some interest, however, in the skills needed to obtain a career in ACOM (23.4%). Figure 4 represents what topics the participants would like to learn in an ACOM class.

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Because there is currently not an ACOM course available for high school students in which to enroll, students do not have an opportunity to obtain the above skills. We asked the students if they would enroll in an ACOM if it were available. According to the students, 42.1% would enroll in an ACOM course ($n = 245$) and 54.8% would not ($n = 345$). Concluding the post-lesson instrument, students were asked if they would be interested in participating in the agricultural communications CDE. Students seemed to be interested in competing with 51% indicating “yes” and 33.2% recording “no.”

Summary

Based on the findings of this sample of participants it can be concluded that over half of the students enrolled in agricultural science courses across Arkansas are unfamiliar with ACOM. However, when asked which aspects of ACOM they were most interested learning more about, design was most popular followed by multimedia, writing and careers. This supports the finding by Talbert et al. (2005) that agricultural education must adapt to developing trends in society and industry. The findings of this study support the need for an ACOM curriculum in Arkansas secondary agricultural science programs. This research found that students enrolled in agricultural science courses prefer to learn by hands-on activities and working in groups rather than PowerPoint presentations, taking notes and lecture-based learning; this finding is supported by the theory of constructivism, Kolb’s (1984) Theory of Experiential Learning, and the study conducted by Javenkowski and Schmidt (2000) that affirms the effectiveness of classroom instruction, may be increased by utilizing multiple teaching strategies.

ACOM skills and competencies can provide opportunities for students beyond high school graduation. The Vocational Education Act of 1963 recognizes that

courses train students for employment and success in college (Hayward, 1993). Currently, ACOM curriculum is being piloted in Arkansas for the high school agriculture classroom, and it is evident that students are excited and interested in learning about the different aspects of this unique field supporting the study by Margaryan et al. (2011) stating that students are digital natives. However, based on the findings of this study, students are not aware of what ACOM entails or what it has to offer. Of the 630 participants in this study, 64.8% had taken 1 to 2 agricultural courses. Additional study should focus on an investigation of potential correlations between the awareness level of ACOM competencies and career opportunities and the number of agriculture courses students have enrolled in prior to assessment.

Based on the conclusions of this study, recommendations for practice are as follow. An ACOM curriculum is needed to provide students with skills needed to be successful in today’s job market. As conveyed by multiple researchers (Bigge and Shermis, 1999; Gredler, 2005; Schunk, 2004), student perceptions must be considered in order to justify learning. Participants have indicated an interest in the ACOM subject area. Teachers should incorporate hands-on activities and project based learning to teach students the skills needed in an ACOM career. Additionally, as supported by Birkenholz and Craven (1996) and the findings of this study, universities should include ACOM curriculum in traditional agricultural education programs for students who want to further their education in this sector of the agricultural industry.

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