

High School Agricultural Communications Competencies: A National Delphi Study

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Abstract

The major purpose of this study was to identify competencies that should be achieved by high school students who complete courses in agricultural communications. Identification of the competencies came from industry leaders, high school agricultural education teachers, and agricultural communications university faculty. As a means of accomplishing the purpose of the study, answers to the following questions were sought:

1. What specific topics should be included in a high school curriculum for agricultural communications?
2. For each topic identified, what competencies should agricultural communications students possess upon completion of the program?
3. For each competency identified, at what scholastic level should they be introduced to the student?

A three-round Delphi technique was the principle procedure used to conduct the study with a total of 75 individuals being asked to participate in round one. In the first round, the panel identified 11 topic areas that should be included in a high school agricultural communications course: (1) Writing; (2) Computer/Information Technology; (3) Agricultural Industry; (4) Communications History; (5) Professional Development; (6) Research/ Information Gathering; (7) Ethics; (8) Public Relations/Advertising/ Marketing; (9) Leadership Development; (10) Legislative Issues; and (11) Communication Skills.

Resulting rounds produced 93 competencies within the 11 topic areas that were identified for potential inclusion in the high school curriculum. Of the 93 competencies, two were eliminated due to lack of agreement by the panel. Scholastic level ratings by the panel further reduced the number of competencies appropriate for high school students to 76 and categorized the remaining competencies according to appropriateness for introduction at the freshman, sophomore, junior and senior level.

Introduction

The National Research Council (1988), in its final report on agricultural education, spoke of the tremendous need for agricultural literacy and “education about agriculture.” The Council recommended that agricultural education be expanded to include education in this area. Lockaby and Vernon (1998) contend that agricultural communications has always been an important component of the agricultural education program and an even closer relationship should exist. Birkenholz and Craven (1996) have noted agricultural communications is one of the most important aspects of agricultural education. Osborne and Phipps (1988) list skills in agricultural communications as one of the goals of agricultural education.

A national steering committee, charged with the concept of “reinventing agricultural education” (National Council for Agricultural Education, 1999), concluded that one of the major goals of agricultural education should be to enhance agricultural literacy skills. In 1999, the National FFA Organization, which conducts competitive events to test curricula knowledge of high school agricultural education students, started a national competition in agricultural communications. Approval of this competition by the National FFA Board of Directors is a clear indication of the recognized importance of agricultural communications as part of the high school agricultural education program.

In order for realistic priorities for instructional developments to occur, the curriculum planning process should involve all affected by the program. Those involved include teachers, employers, and employees (Diamond, 1989; Sprecker, 1996). Finch and Crunkilton (1989) indicate it is vitally important to ensure that curriculum content reflect the needs of the work force. Bailey-Evans (1994) contends the explosion of knowledge in agriculture and a parallel revolution in communications has created a demand for curriculum evaluation in the area of agricultural communications. According to Sprecker (1996), the need for periodic examination of agricultural communications programs and curricula is acute. Bailey-Evans (1994) notes agricultural communications curriculum need to be continually expanded and updated to reflect the technological advancements of today and the future.

Sprecker (1996) noted the competencies needed to become an agricultural communicator have changed with technology and job requirements, and there is a pressing need to examine the agricultural communications curriculum. Terry et al. (1995) claim that specialization and scientific discovery in the field of food, agriculture, and natural resources has created a new need to communicate information about this area. If academic curriculum is to meet the needs of industry, “agricultural communications must continually survey professionals to determine the needs and skills required for a career in agricultural communications and then adjust the curriculum accordingly” (Sprecker & Rudd, 1998 p. 2).

Purpose and Research Questions

The major purpose of this study was to identify competencies that should be attained by high school students who complete courses in agricultural communications.

As a means of accomplishing the purpose, answers to three questions were sought:

1. What specific topics should be included in a high school curriculum for agricultural communications?
2. For each topic identified, what competencies should agricultural communications students possess upon completion of the program?
3. For each competency identified, at what scholastic level should they be introduced to the student?

Methodology

A three-round Delphi technique was the principle procedure used to conduct this study. A technique suggested by Anderson and Jones (1986) was used to select one segment of the panel of experts. State supervisors of agricultural education from all 50 states were used as third parties to nominate agriscience teachers in their state with a strong interest in agricultural communications. The nomination process resulted in 33 individuals from 27 states who served as the high school teaching experts for this study. The second segment of the panel of experts consisted of agriculture industry leaders. The individuals selected for this segment were the executive officers of seven agricultural communications-related professional organizations, which resulted in 21 individuals. The third subgroup of the panel of experts was university faculty that were teaching agricultural communications courses during the 1999-2000 school year. Twenty-one university faculty were included in the initial panel. The three subgroups comprised a total of 75 individuals who were asked to participate in Round One of the study.

From the reviewed literature, an open-ended questionnaire consisting of three questions was developed. These questions were validated for content regarding their appropriateness to the objectives of the study by a panel of faculty and graduate students. The instrument was pilot tested in Texas using agricultural communicators, agricultural students, and agriscience teachers who were not included in the selected panel of experts. Following completion of the pilot test, the researcher made revisions based on the results and suggestions from those involved in the pilot test.

The Round One questionnaire consisted of three open-ended questions. The panel of experts was asked to list several answers to each open-ended question under investigation. Frequencies, percentages, and rankings were used to summarize the responses to this round. Three independent readers completed this technique on the round one responses. The three readers then came together and collapsed similar responses. Dillman's Total Design Method (1978) was used for non-response follow-up. A total response of 76% was achieved for this round.

In Round Two, the panel of experts was presented with an instrument which asked them to do two things: (1) rate the 82 competencies that emerged from Round One in terms of appropriateness for a high school agricultural communications curriculum, and (2) identify the scholastic level at which each competency should be introduced. The panel was asked to rate each competency using a four-point Likert-type scale with 1 = "Strongly Disagree," 2 =

“Disagree,” 3 = “Agree,” and 4 = “Strongly Agree.” The scale was used to determine each panel member’s level of agreement as to the inclusion of the competency in a high school agricultural communications curriculum. The researchers determined *a priori* that only those competencies receiving a 75% level of agreement or higher would be used for inclusion in the curriculum. In addition to evaluating the 82 competencies, panel members were asked to list additional competencies missed in Round One. They were also asked to identify the scholastic level where each competency should be introduced, using the following scale: 1 = “High School Freshman,” 2 = “High School Sophomore,” 3 = High School Junior, 4 = “High School Senior,” and 5 = “College.” The College category was included allowing the panel member to identify competencies believed to be too advanced for high school. Dillman’s (1978) non-response follow-up procedures were followed. Forty-three of the 56 individuals responded for a total response rate of 77%. Frequencies, percentages, and ranks were used to evaluate the second round responses.

Round Three served as the final round for the study. Because of the consensus found on the 82 items in Round Two, only the 11 new competencies identified in Round Two were submitted to the panel in Round Three for members’ evaluation. The instrument was sent to 41 of the 43 members who responded in Round Two. Two of the panel members indicated they would not be able to participate in the last round due to uncontrollable circumstances. Dillman’s (1978) non-response follow-up procedures were followed. Thirty-six individuals responded for a total response rate of 88%. Frequencies, percentages, and rankings were used to evaluate the third round responses.

Findings

Research Question 1

The open-ended question regarding what topics should be included in a high school agricultural communications course produced 262 responses from the panel. Analysis of the responses produced the following 11 topic areas: (1) Writing; (2) Computer/Information Technology; (3) Agricultural Industry; (4) Communications History; (5) Professional Development; (6) Research/Information Gathering; (7) Ethics; (8) Public Relations/Advertising/Marketing; (9) Leadership Development; (10) Legislative Issues; and (11) Communication Skills.

Research Question 2

Ninety-three competencies were identified and evaluated by the panel of experts. One hundred percent of the panel agreed or strongly agreed that ninety one competencies should be included in the high school agricultural communications curriculum. Competencies receiving 100% levels of agreement were “Identify the components and format of news releases,” “Write a professional letter,” “Utilize correct grammar,” “Utilize correct spelling,” “Utilize correct punctuation,” “Identify what makes a topic newsworthy,” “Utilize appropriate agricultural terminology,” “Identify current issues and concerns in the agricultural industry,” “List qualities of an effective communicator,” “Identify the various career opportunities in agricultural communications,” “Demonstrate professional/business etiquette,” “Demonstrate a proper work ethic,” “Demonstrate listening skills,” “Research both sides of an issue,” “Check facts,” “Identify

biased information,” “Identify sources for information,” “Discuss the role of public relations in agricultural companies,” “Discuss the role of public relation in agricultural organizations,” “Speak intelligently before a group,” “Effectively utilize the Internet” and “Properly use a 35 mm camera.”

Competencies receiving a 90-99% level of agreement were “Effectively interview a person” (97.7%), “Write a quality thank-you note” (97.7%), “Use e-mail properly” (97.7%), “Identify barriers to effective communication” (97.7%), “Interview for employment” (97.7%), “Work in a team activity” (97.7%), “Demonstrate proper phone skills” (97.7%), “Work under pressure” (97.7%), “Identify the importance of correctly reporting the facts” (97.7%), “Deliver a formal, oral presentation using clear enunciation, gestures, tone and vocabulary” (97.7%), “Give an effective interview” (97.7%), “Identify the basic workings of the government systems and how it affects the agricultural industry” (97.7%), “Properly use a digital camera” (97.7%), “Demonstrate different methods of communication” (97.6%), “Demonstrate the ability to cite sources” (97.1%), “Write a news story” (97.1%), “Discuss how current bills will affect agriculture” (97.0%), “Write a news release” (95.4%), “Accurately proofread a document” (95.4%), “Utilize the basic principles involved in technical writing” (95.4%), “Seek, gather and synthesize information” (95.4%), “Distinguish between right and wrong” (95.4%), “Properly use a video camera” (95.4%), “Write a feature story” (95.3%), “Write a caption for photos” (95.3%), “Perform basic word processing” (95.3%), “Converse knowledgeably on the different areas in agriculture” (95.3%), “Identify the key elements of a public relations campaign” (95.3%), “Utilize desktop publishing techniques” (95.2%), “Identify appropriate file formats when using scanning programs” (95.2%), “Demonstrate the ability to be an effective spokesperson for agriculture” (94.1%), “Determine whether a topic would be best covered in a news article or feature article” (93.1%), “Create a resume” (93.1%), “Identify various professional communication organizations” (93.1%), “Identify the importance of an advertising campaign” (93.0%), “Discuss the techniques and principles involved in public speaking” (93.0%), “Utilize correct parliamentary procedure” (93.0%), “Effectively scan a document” (92.9%), “Identify bias in media stories” (91.2%), “Identify different audiences” (91.1%), “Write for broadcast” (90.7%), “Effectively edit a story” (90.7%), “Write a speech” (90.7%), “Identify strategies to improve communication” (90.7%), “Prepare a public relations campaign” (90.7%), “Prepare a 4-6 minute speech within a 30-minute preparation time” (90.7%), “Deliver a radio broadcast” (90.7%), “Create and design a web page” (90.5%), “Target different audiences” (90.6%) and “Develop a multimedia presentation” (90.5%).

Competencies receiving a 80-89% level of agreement were “Write for the web” (88.4%), “Discuss libel law” (88.4%), “Discuss the Freedom of Information Act” (88.4%), “Deliver a TV broadcast” (88.4%), “Identify current legislative bills that affect agriculture” (88.2%), “Discuss the role of public relations in advertising agencies” (86.1%), “Describe the history of agricultural communications” (86.0%), “Describe the communications model” (86.0%), “Demonstrate sales skills” (86.0%), “Utilize graphic editing programs” (85.7%), “Discuss the importance of belonging to professional organizations” (85.3%), “Interpret statistics” (83.8%), “Identify the basics of corporate communications” (83.8%), “Utilize an Associated Press stylebook” (83.7%), “List the benefits of attending professional organization meetings” (82.3%), and “Define media literacy” (80.9%).

Competencies receiving a 75-79% level of agreement were “Identify the steps in the printing/developing process” (79.0%), “Interpret the basics of the commodities market” (76.8%), and “Apply common sense logic to an economic trend analysis” (76.7%).

Two competencies did not meet the 75% agreement criteria. The two competencies were “Analyze and apply technical data and procedures found in service manuals” (69.0%), and “Utilize a nonlinear video-editing program” (65.0%).

Research Question 3

The ninety-three competencies were categorized by the 11 topics that were identified. Within each topic area, the panel identified the scholastic level at which each competency should be introduced. Mode responses for the scholastic level of introduction were identified and used in reporting the results.

Introduction Level for Writing Competencies

The panel determined it was appropriate to introduce all of the writing competencies at the high school level. For five of the competencies, a majority of the panel believed they should be taught at the freshman level. These five competencies and the percentage of the respondents who believed they should be introduced at the freshman level were “Write a quality thank-you note” (73.8%), “Utilize correct spelling” (73.2%), “Utilize correct punctuation” (73.2%), “Utilize correct grammar” (70.7%) and “Write a speech” (50.0%). The panel was evenly divided in their agreement that one writing competency, “Identify what makes a topic newsworthy,” should be introduced at the sophomore level (35.7%) or the junior level (35.7%).

Twelve additional writing competencies were identified as best introduced at the junior level. Those competencies with a mode level of agreement at the junior level were “Identify what makes a topic newsworthy” (48.8%), “Create a resume” (47.6%), “Write a news story” (44.4%), “Write captions for photos” (42.9%), “Determine whether a topic would be best covered as a news article or feature article” (40.5%), “Accurately proofread a document” (40.5%), “Write a professional letter” (39.5%), “Utilize an associated press stylebook” (39.0%), “Write a news release” (38.1%), “Write for the web” (35.7%), “Write a feature story” (33.3%), “Effectively edit a story” (33.3%) and “Effectively interview a person” (28.6%). The last three competencies, “Write a feature story,” “Effectively edit a story,” and “Effectively interview a person” had a bi-modal level of agreement, with the same percentage rating them as being best introduced at the senior level.

Two competencies were also rated as being best introduced at the senior level, according to the mode level of agreement. Those two competencies were “Write for broadcast” (39.5%) and “Utilize the basic principles involved in technical writing” (26.2%).

Introduction Level for Computer/Information Technology Competencies

The panel found that it was appropriate to introduce all but one of the computer/information technology competencies at the high school level. A majority of the panel indicated three of the competencies were best introduced at the freshman level. These three competencies and their level of agreement with freshman introduction were “Perform basic word processing” (76.7%), “Use e-mail properly” (55.8%) and “Effectively utilize the Internet” (52.8%).

Three computer/information technology competencies were identified as being best introduced at the junior level, according to the mode level of agreement. These competencies and their respective levels of agreement for junior introduction were “Effectively scan a document” (31%), “Develop a multimedia presentation” (26.2%) and “Utilize graphic editing programs” (26.2%). The last competency, “Utilize graphic editing programs,” was bi-modal with 26.2% of the panel agreeing that it should be best taught at the senior level. Other competencies rated as senior level for introduction were “Create and design a web page” (34.9%), “Utilize desktop publishing techniques” (33.3%) and “Identify appropriate file formats when using scanning programs” (31.0%). The final competency in the computer/information technology topic, “Utilize a nonlinear video-editing program,” was rated by a majority of the panel (60.0%) as being best introduced at the college level.

Introduction Level for Agricultural Industry Competencies

The panel found all three agricultural industry competencies are suitable for introduction at the high school level. Nearly one-half (48.8%) of the panel believed one competency, “Utilize appropriate agricultural technology,” should be introduced at the freshman level. Although the panel was more divided as to where the competency “Identify current issues and concerns in the agricultural industry” should be introduced, the most common response was introduction at the sophomore level (27.9%). The most common response for the final competency, “Converse knowledgeably on the different areas in agriculture,” was evenly split between introduction at the junior level and introduction at the senior level (25.6% each).

Introduction Level for Communication History Competencies

One communication history competency had a wide range of opinions as to when it should be introduced. The most common response for introduction of the competency, “List qualities of an effective communicator,” was evenly split between the freshman and junior level (27.9% each). The remainder of the communication history competencies had junior level introduction as the most common response by the panel. These competencies and the percentage of the panel who agreed they should be introduced at the junior level were “Identify barriers to effective communication” (46.5%), “Identify strategies to improve communication” (39.5%), “Describe the communications model” (35.7%), “Define media literacy, basic elements and techniques” (35.7%), “Describe the history of agricultural communications” (32.6%) and “Demonstrate different methods of communications” (31.0%).

Introduction Level for Professional Development Competencies

The panel's most common response for nearly one-half of the competencies in professional development was freshman introduction. These competencies and the percent of the panel who agreed with freshman introduction were "Demonstrate listening skills" (61.9%), "Work in a team activity" (52.4%), "Demonstrate proper phone skills" (46.5%) and "Demonstrate proper work ethic" (46.5%). Two competencies, "Work under pressure" (41.9%) and "Demonstrate professional/business etiquette" (33.3%) most common rating was junior level. Three competencies, "Interview for employment" (39.5%), "Identify various professional communications organizations" (38.1%) and "Identify the various career opportunities in agricultural communications" (35.7%) were most commonly rated as senior level. Two competencies "List the benefits of attending professional organization meetings" (41.7%) and "Discuss the importance of belonging to professional organizations" (33.3%) were most commonly rated as college level.

Introduction Level for Research/Information Gathering Competencies

The panel rated most of the research/information gathering competencies as advanced, with the most common rating for all but one competency at the junior level or above. The competency, "Demonstrate the ability to cite sources correctly," had 31.4% of the rating it as freshman level. Five competencies were found to be appropriate at the junior level. Those competencies and the percentage of panel members that rated the competency as junior level were "Identify biased information" (44.2%), "Identify sources for information" (42.9%), "Check facts" (41.9%), "Research both sides of an issue" (39.5%) and "Analyze and apply technical data and procedures found in service manuals" (31.7%).

The competency "Seek, gather and synthesize information" was most commonly rated as senior level (30.2%). The last research/information gathering competency, "Interpret statistics," had the same percentage of panel members (34.9%) rating the competency at senior and college level, which were the most common responses.

Introduction Level for Ethics Competencies

There were three competencies under the topic of ethics in this survey. One competency, "Distinguish between right and wrong," was rated by a majority of the panel (69.0%) as a freshman level competency. One competency, "Identify bias in media stories," had an equal percentage of panel members (27.8%) rating it both junior and senior level. The other ethic competency, "Identify the importance of correctly reporting the facts," had two common responses with an equal number of panel members rating this competency as a freshman level or junior level (31.0% each).

Introduction Level for Public Relations/Advertising/Marketing Competencies

One-half of the public relations/advertising/marketing competencies had a most common rating of junior level. The junior level competencies and the percentage of panel members that rated them as junior were "Identify the key elements of a public relations campaign" (37.2%), "Discuss the role of public relations in agricultural companies" (37.2%), "Discuss the role of public relations in farm organizations" (34.9%), "Demonstrate sales skills" (28.6%), "Identify

the importance of an advertising campaign” (27.9%), and “Identify different audiences” (27.8%). Two of the above mentioned competencies “Discuss the role of public relations in farm organizations” and “Identify the importance of an advertising campaign” had the same number of panel members rating them as senior level.

The competency, “Prepare a public relations campaign,” had equal percentages of panel members (37.2%) rating it as a senior or college level for the most common responses. Five additional competencies had college level as the most common response. These competencies and the percentage of members that rated them as college level were “Apply common sense logic to an economic trend analysis” (50.0%), “Identify the basics of corporate communications” (44.2%), “Interpret the basics of the commodities market” (41.5%) and “Discuss the role of public relations in advertising agencies” (38.1%), and “Target different audiences” (30.6%).

Introduction Level for Leadership Development Competencies

The majority of the leadership development competencies had frequent rating of freshman level. The freshman level competencies and the percentage of the panel agreeing with freshmen introduction were “Utilize correct parliamentary procedure” (65.0%), “Discuss the techniques and principles involved in public speaking” (64.3%), “Deliver a formal, oral presentation using clear enunciation gestures, tone and vocabulary” (54.8%), and “Speak intelligently before a group” (39.0%).

The final three leadership development competencies were most commonly rated as junior level. The three competencies and the percentage of panel members that rated them as junior level were “Give an effective interview” (47.6%), “Prepare a 4-6 minute speech within a 30-minute preparation time” (41.5%) and “Demonstrate the ability to be an effective spokesperson for agriculture” (34.3%).

Introduction Level for Legislative Issues Competencies

The panel’s most common rating for introduction of each of the legislative issue competencies was at either the senior or college level. One competency, “Identify the basic workings of the government system and how it affects the agricultural industry” had 48.8% of the panel rating it as senior level. One competency, “Discuss how current bills will affect agriculture,” had the same percentage (41.7%) of panel members rating it as senior or college level. The other three competencies, “Discuss libel law” (51.2%), “Identify current legislative bills that affect agriculture” (47.1%) and “Discuss the Freedom of Information Act” (44.2%), were most commonly rated as college level competencies (51.2% and 44.2%, respectively).

Introduction Level for Communication Skills Competencies

One communication skill competency, “Properly use a 35 mm camera,” had a tie for the most common response with 32.6% of the panel members rating it for introduction at either the sophomore or junior level.

Three competencies were most commonly rated as being appropriate for introduction at the junior level. Those three competencies and the percentage of panel members rating it at the junior level were “Properly use a digital camera” (40.5%), “Properly use a video camera”

(31.0%) and “Identify the steps in the printing/developing process” (26.2%). The final two communication skill competencies were most commonly rated as college level. The two competencies and the percentage of panel members rating them as college level were, “Deliver a radio broadcast” (35.7%), and “Deliver a TV broadcast” (42.9%).

Conclusions

The conclusions for the study are based on interpretations of data presented in the study and are restricted to the populations surveyed. It is important to note that mode responses from the panel were used to determine when a competency should be introduced. In several instances where the response was bi-modal, the highest scholastic level of introduction was utilized to interpret the results. Based on this information, the researchers makes the following conclusions:

1. The following topic areas are appropriate for use in developing a curriculum in agricultural communications for high school students:
 - Writing
 - Computer/Information Technology
 - Agricultural Industry
 - Communications History
 - Professional Development
 - Research/Information Gathering
 - Ethics
 - Public Relations/Advertising/Marketing
 - Leadership Development
 - Legislative Issues
 - Communication Skills

2. The following represents the major topic areas and competencies that should be utilized in developing an introductory agricultural communications curriculum for high school freshmen and sophomores:
 - Writing - Write a quality thank-you note; utilize correct spelling; utilize correct punctuation; utilize correct grammar; and write a speech.
 - Computer/Information Technology – Perform basic word processing; use e-mail properly; and effectively utilize the Internet.
 - Agricultural Industry – Utilize appropriate agricultural terminology; and identify current issues and concerns in the agricultural industry.
 - Professional Development – Demonstrate listening skills; work in a team activity; demonstrate proper phone skills; and demonstrate a proper work ethic.
 - Research/Information Gathering – Demonstrate the ability to cite sources correctly.
 - Ethics – Distinguish between right and wrong.
 - Leadership Development – Utilize correct parliamentary procedure; discuss the techniques and principles involved in public speaking; deliver a formal, oral presentation using clear enunciation, gestures, tone and vocabulary; and dpeak intelligently before a group.

3. The following represents the major topic areas and competencies that should be utilized in developing an intermediate agricultural communications curriculum for high school juniors:
- Writing – Identify what makes a topic newsworthy, identify the components and format of news releases, create a resume, accurately proofread a document, write a professional letter, utilize an Associated Press Stylebook, write a news release, write for the web, and write a news story.
 - Computer/Information Technology – Effectively scan a document; and develop a multimedia presentation.
 - History – Describe the history of agricultural communications; demonstrate different methods of communications; list qualities of an effective communicator; identify barriers to effective communication; define media literacy, basic elements and techniques; identify strategies to improve communication; and describe the communication model.
 - Professional Development – Develop the ability to work under pressure; and demonstrate professional/business etiquette.
 - Research/Information Gathering – Identify biased information; identify sources of information; check facts; and research both sides of an issue
 - Ethics – Identify the importance of correctly reporting the facts.
 - Public Relations/Advertising/Marketing – Identify the key elements of a public relations campaign; discuss the role of public relations in agricultural companies; demonstrate sales skills; and Identify different audiences.
 - Leadership Development – Give an effective interview; prepare a 4-6 minute speech within a 30-minute preparation time; and demonstrate the ability to be an effective spokesperson for agriculture.
 - Legislative Skills – Identify the basic workings of the government system and how it affects the agricultural industry.
 - Communications Skills – Properly use a 35 mm camera; properly use the digital camera; properly use a video camera; and identify the steps in the printing/ developing process.
4. The following represents the major topic areas and competencies that should be utilized in developing an advanced agricultural communications curriculum for high school seniors:
- Writing – Write a feature story; effectively edit a story; effectively interview a person; write for broadcast; and utilize the basic principles involved in technical writing.
 - Computer Information Technology – Utilize graphic editing programs; create and design a web page; utilize desktop publishing techniques; and identify appropriate file formats when using scanning programs.
 - Agricultural Industry – Converse knowledgeably on the different areas in agriculture.
 - Professional Development – Interview for employment; identify various professional communications organizations; and identify the various career opportunities in agricultural communications.
 - Research/Information Gathering – Seek, gather and synthesize information.
 - Public Relations/Advertising/Marketing – Discuss the role of public relations in farm organizations; and identify the importance of an advertising campaign.

Legislative Issues – Identify the basic workings of the government system and how it affects the agricultural industry.

Ethics – Identify bias in media stories.

5. The following represents major competencies that are not suitable for high school instruction, but rather should be introduced at the college level:
 - Utilize a nonlinear video-editing program; interpret statistics; prepare a public relations campaign; apply common sense logic to an economic trend analysis; identify the basics of corporate communications; interpret the basics of the commodities market; discuss the role of public relations in advertising agencies; discuss libel law; discuss the Freedom of Information Act; deliver a radio broadcast; deliver a TV broadcast; discuss how current bills will affect agriculture; identify current legislative bills that affect agriculture; list the benefits of attending professional organization meetings; discuss the importance of belonging to professional organizations; and target different audiences.

Recommendations

The following recommendations are based on the findings and conclusions of this study:

1. The seventy-six competencies identified in this study should be utilized to develop curriculum materials for high school agriscience students. The materials should be developed in three separate units: (a) Introductory Agricultural Communications, (b) Intermediate Agricultural Communications, and (c) Advanced Agricultural Communications. The introductory unit should be utilized for high school freshman and sophomores, the intermediate unit for high school juniors, and the advanced unit for high school seniors.
2. In order to facilitate the development of such curriculum materials, the list of competencies should be disseminated to agricultural educators in the nation. Potential disseminators include the National FFA Organization, the U. S. Department of Education, and the National Council for Agricultural Education.
3. Curricula using these competencies should be pilot tested to determine if changes/additions are needed.
4. The national FFA organization should utilize the competencies in developing and implementing the new National FFA Agricultural Communications Career Development Event.
5. Additional studies should be conducted on the state or regional level to determine if changes or additions need to be made in the competencies in order to be most effective within a particular state or region.

References

- Anderson, T., & Jones, N. (1986). Curriculum research: A review of group process. (Report No. ISBN-0-86397-185-7). Payneham, Australia: TAFE National Center for Research and Development. (ERIC Document Reproduction Service No. ED 275 870)
- Bailey-Evans, F. (1994). Enhancing the agricultural communications curriculum: a national delphi study. Lubbock, TX. Texas Tech University, unpublished master's thesis.
- Birkenholz, R.J. & Craven, J. (1996) Agricultural communication—bridging the gap. The Agricultural Education Magazine68 (5), 10-11.
- Diamond, R.M. (1989). Designing and improving courses and curricula in higher education. San Francisco: Jossey-Bass.
- Dillman, D.A. (1978). Mail and telephone surveys: The total design method. New York: John Wiley.
- Finch, C.F., & Crunkilton, J.R. (1989). Curriculum development in vocational and technical educational: education: Planning, content, and implementation (3rd ed.). Needham Heights, MA: Allyn and Bacon, Inc.
- Lockaby, J. & Vernon, S. J. (1998). Agricultural communications: what is its connection to agricultural education. The Agricultural Education Magazine,71(3), 16-17.
- National Council for Agricultural Education. (1999). Reinventing Agricultural Education for the Year 2020 A new era in agriculture [Brochure]. Alexandria, VA: Author.
- National Research Council, (1988). Understanding agriculture: new directions for education. Washington, DC: National Academy Press.
- National FFA Organization. (1999, December). Spreading agriculture's message and preparing for jobs. Making a difference, 8, 7.
- Phipps, L.J. & Osborne, E.W. (1988). Handbook on agricultural education in public schools, Danville, IL: The Interstate Printers & Publishers, Inc.
- Sprecker, K.J. (1996) Opinions of instructors, practitioners and alumni concerning curricular requirements of agricultural communication students at the University of Florida. Unpublished master's thesis, University of Florida, Gainesville FL
- Sprecker, K. J. & Rudd R. D. (1998) Opinions of practitioners concerning curricular requirements of agricultural communications students at the University of Florida. Journal of Applied Communications 82,(1), 31-42.

Terry, R., Vaughn, P., Vernon, S., Lockaby, J., Evans, F., & Rehrman, M. (1994). Enhancing the Agricultural Communications Curriculum: A Vision for the Future, Lubbock, TX: Texas Tech University Press.