Integrating Critical Thinking Into Agricultural Communications Curricula

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Abstract

Agricultural communications instructors were provided with summary findings from a previous study on agricultural communications undergraduate majors' level of critical thinking skills and were asked to respond to the findings by determining reasons why students' skills were low, identifying ways to enhance critical thinking in courses, and stating the benefits for students to have strong critical thinking skills. Respondents identified these factors that contribute to agricultural communications students' lack of critical thinking skills: an inability to read critically or to read well, a lack of analytical skills, and a lack of curiosity. The instructors identified four major areas to better utilize critical thinking in their courses: using real-world projects and situations, emphasizing research, demanding more and richer writing assignments, and exposing students to differing viewpoints. The benefits to students for having strong critical thinking skills include becoming conscientious consumers of information, mature leaders, and better employees. Recommendations for implementing critical thinking into agricultural communications curricula include providing opportunities for real-world, practical projects; incorporating case studies into courses; incorporating varying viewpoints—not just a pro-agriculture attitude; and emphasizing analysis of information—not just finding information.

Introduction

Enhancing college students' critical thinking skills has become a major emphasis in education circles in recent years. Critical thinking, "a reasoned, purposive, and introspective approach to solving problems" (Rudd, Baker, & Hoover, 2000, p. 5), in education calls on students to evaluate their own thought processes (Kalman, 2002). Elder and Paul (1994) wrote that critical thinking is best understood as the ability to take charge of one's own thinking by developing sound criteria and standards for analyzing and assessing one's own thinking and using those criteria to improve its quality. Simply

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put, critical thinking is the "reasonable and reflective thinking that is focused upon deciding what to believe or do" (Norris & Ennis, 1989, p. 18).

Critical thinking accompanies a movement in education, including science-teaching reform (National Research Council, 1996), toward inquiry-based or problem-based learning. Inquiry-based learning is a method of instruction focusing on students and their ability to design a process for use in solving a problem, requiring higher levels of cognition (Uno, 1990). According to Schamel and Ayres (1992), students learn best by doing or preparing their own questions based on their observations rather than participating in a predetermined exercise with a foregone conclusion.

Agricultural educators have studied critical thinking as it relates to levels of cognition (Cano & Martinez, 1991), learning styles (Rudd, Baker, & Hoover, 2000; Torres & Cano, 1995), and critical thinking dispositions at secondary and postsecondary levels (Whittington, 1995, 2000). Facione (1990) concluded that at the very core of critical thinking are the following skills: interpretation (comprehending and expressing meaning about a variety of experiences, beliefs, procedures, or rules), analysis (identifying the relationship between concepts to express beliefs or judgments), evaluation (assessing the credibility and logical strength of statements), inference (drawing reasonable conclusions based on facts or principles), explanation (stating and justifying the results of one's reasoning), and self-regulation (monitoring personal cognitive activities to ensure that a person is engaged in critical thinking).

Critical thinking is a valuable skill that, once learned, can be applied in many disciplines; however, researchers have contended that there is a need to think critically within specific disciplines (Ennis, 1990). According to Glaser (1941), critical thinking is in part an "attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences" (pp. 5-6).

Students in the agricultural communications discipline need to become critical thinkers so they can make connections, draw inferences, report inquisitively, and argue persuasively (Bisdorf-Rhoades, Ricketts, Irani, Lundy, & Telg, 2005). They also should be able to use logic and reasoning skills to be more effective in communicating topics, such as agriculture, which can be both misunderstood and controversial. Bisdorf-Rhoades et al. (2005) examined the critical thinking dispositions of 227 agricultural communications majors, representing 12 universities, to find out how well students think critically. Results indicated that only two agricultural communications majors (1%) in the study would be classified as having a strong disposition toward critical thinking, while 67 (30%) would actually be

classified as weak in critical thinking dispositions, with the remainder (69%) falling somewhere in-between. The authors recommended that "agricultural communications educators and researchers explore ways to activate and enhance critical thinking dispositions so as to improve their students' potential for future success" (p. 31).

The agricultural communications instructors who collected data for the Bisdorf-Rhoades et al. (2005) study at the 12 participating institutions were asked to respond to the study's findings. The purpose of this study was to report the instructors' comments on agricultural communications students' critical thinking dispositions and skills and provide recommendations for incorporating critical thinking-building assignments into agricultural communications curricula.

Methodology

This study utilized open-ended response questions sent via electronic mail to the 12 instructors who participated in the study described above on agricultural communications majors' critical thinking dispositions. The instructors were contacted by electronic mail twice and by telephone once. Nine responded to the open-ended questions, submitting their narrative responses via electronic mail.

The instructors were asked to respond to a summary of the study's findings by answering these questions:

- What are the implications for curriculum development, in terms of improving agricultural communications students' critical thinking capabilities, which you can draw from the findings?
- Based on the findings, what recommendations for curriculum development, in terms of improving agricultural communications students' critical thinking capabilities, would you make?
- What benefits are there for agricultural communications students to have a strong disposition toward critical thinking?

Data was collected in the form of the respondents' electronic mail responses to the questions. Qualitative analysis of the data was conducted using open coding to search for common themes using the constant-comparative technique (Glaser, 1978). To determine intercoder reliability, the researchers independently coded each of the responses, then used Cohen's Kappa to assess agreement. The intercoder agreement using Cohen's Kappa was .85. A Kappa of .70 or above is considered a satisfactory agreement level (Garbin, 2004).

Findings

Implications for Curriculum Development

Agricultural communications instructor respondents pointed to several factors that may contribute to agricultural communications students' lack of critical thinking skills: an inability to read critically or to read well, a lack of analytical skills, and a lack of curiosity.

Reading

Comments from instructors implied that agricultural communications students have not been taught to read critically. As one respondent wrote: "We find that our students do not read, do not like to read, avoid reading, and when they do read, do not read well." The instructor mentioned that her department already had taken steps to require more reading in its courses, including "more analytical reports that require critical thinking; more emphasis on content-based writing that needs clear thinking behind it." Instructors also want to "broaden students' horizons," as stated by one respondent, because students have a tendency to get their information from only one source: the local or campus newspaper. As one instructor noted, "A student said, 'If I don't read about it in the (local weekly), then I don't need to know about it.'"

Analytical Skills

One recurring theme was students' inability to analyze information and the lack of opportunities for students to analyze information. One instructor noted that students seeking communication degrees are more "people-centered than they are analytical. Our students want to avoid the hard science classes and those that require analytical skills." The writer went on to say that if the agricultural communications curriculum is focused only on reporting, "leaving the solution up to others," then "students don't see a need to think critically."

Curiosity

Respondents noted that students lack a sense of curiosity and are not "conscientious consumers of information." What information students get–even cursory, shallow information–is taken as truth, according to one instructor. Students are not curious enough to think for themselves and want to be "spoon-fed" and "hand-held," as one instructor wrote.

Timing

Overall, instructors agreed that they needed immediately to implement a critical thinking emphasis in their agricultural communications curriculum. As one respondent noted: "Obviously, we haven't done enough, in terms of stimulating their ability to think independently and without bias,

and we should make an effort to improve that." Respondents said that the longer they wait to implement critical thinking into their courses, the less prepared their students will be for the workforce and for society. As another person wrote, "We MUST implement opportunities for students to better develop critical thinking skills." Otherwise, as another respondent described, "If we don't encourage critical thinking in our students and in our curricula, I've got two words of warning for all agricultural communications programs: Jayson Blair" (referring to the young *New York Times* reporter fired in 2003 for fabricating newspaper articles).

Recommendations for Curriculum Development

After the respondents were asked to describe some of the reasons for students' lack of critical thinking skills, they were asked to recommend ways that critical thinking could become integrated into agricultural communications curriculum. The instructors identified four major areas to better utilize critical thinking in their courses: using real-world projects and situations, emphasizing research, demanding more and richer writing assignments, and exposing students to differing viewpoints.

Real-world Situations

Instructors stated that students need their education to be grounded in real-world, practical applications; students need to see that their work has impact. "Students need to be taught how to solve real-world problems, rather than just communicating about the problems," one respondent wrote. Instructors also suggested that case studies be included in curricula so that students can use "critical thinking skills, debates on issues, and problem-solving skills." A respondent wrote, "Engaging students in present-day work life scenarios, where they enter the decision-making process, may lead to increased critical thinking ability."

Research

Respondents recommended that research be emphasized in agricultural communications courses. One respondent had this to say about students' lack of in-depth research skills:

> I don't think our students do enough intensive research on the topics they report on in our courses. Internet sources breed complacency. I plan to include opportunities for students to question everything and conduct literature searches in hard-copy forms (no Internet sources). Call me old-fashioned, but the only way to engage students to think about thinking is to require less, but more intensive, inquiry-based assignments in our courses.

Writing

An emphasis on sound writing skills was an overarching theme in respondents' curriculum recommendations. One instructor said that her academic department already had implemented a new agricultural communications introductory course, focusing on "the basics: reading, writing, arithmetic (statistics), and thinking. By emphasizing these early in our students' academic careers, and by re-enforcing them in our senior seminar, we hope we can improve our students' ability to read and think critically." Another respondent said that the need for more analytical writing should extend beyond just agricultural communications courses. He suggested a push for critical writing in all academic disciplines in colleges of agriculture.

Other Viewpoints

Perhaps most striking was respondents' view that agricultural communications majors need to be exposed to different views within agriculture in their courses. One instructor wrote: "Students should be exposed to different sides of a story/topic and be encouraged to question what they learn." Respondents said that including curricula exposing students to opposing views within agriculture or to controversial issues can enhance students' critical thinking skills. Also, if students advocate traditional agriculture, then they should have the facts and communications skills to share their view in an understandable format. Another instructor noted: "Students should be open-minded and open to let go of personal biases. They need to seek alternative points-of-view and to be willing to change their minds when evidence leads to a new conclusion."

Benefits for Strong Critical Thinking Skills

Respondents said implementing a curriculum that enhances students' critical thinking skills helped students become "conscientious consumers" of information, mature leaders, and better employees. As one instructor wrote, the "better employee" benefit is not only for the students but also for their future employers:

> Better critical thinkers make better employees. The employer will see the critical thinker as one who can make decisions and who will make contributions to the organization and workplace, which translates to success and money for the employer. Students will benefit personally, professionally, and socially.

One instructor noted that critical thinking skills are a necessity to succeed in the communications profession: "Critical thinking skills make you better equipped to present information in an unbiased manner. You don't

take things at face value, but ask questions, seek out different sources, and investigate issues, all of which are necessary skills for a journalist."

In terms of leadership, respondents wrote that students who can "think are problem solvers and leaders. Students who can think clearly can also write clearly." One respondent warned of what could happen if students did not have good critical thinking skills:

> Here are some possible negative consequences of having weak critical thinking skills. Students will be predisposed to the status quo and resistant to change; incapable of handling complex, independent assignments; incapable of solving complex problems; incapable of leading groups effectively; incapable of understanding several viewpoints of a complex issue; have weak interpersonal and public communication skills; and be unable to participate effectively in group problem-solving efforts.

Discussion/Conclusions

If the agricultural communications profession is to continue, instructors must equip students with the skills, including critical thinking skills, they need to succeed. Agricultural communications programs, by and large, have succeeded in providing the communication skill-building that graduates need professionally. Yet, as evidenced in the Bisdorf-Rhoades et al. (2005) study and through instructors' comments in this study, agricultural communications programs must do a better job of helping students think critically. As one respondent wrote: "Strong critical thinking skills, which go hand in hand with strong communication skills, are a ticket to success for professional communicators and for most students in general."

Overall, instructors agreed that incorporating critical thinking into agricultural communications curricula is extremely important. If a move is not made to enhance students' critical thinking disposition, then students will not be prepared for the profession. One respondent offered this warning:

> If we do not help our students become critical thinkers, we are doomed to repeat past mistakes (our own included) with each generation of freshmen walking through the front door. All communicators need to become critical thinkers, or we run the risk of not knowing what is fact and what is fiction.

Recommendations

Agricultural communications instructor respondents indicated that agricultural communications majors are lacking in their critical thinking skills because they have not been taught to think critically. However, the

instructors agreed that implementing real-world assignments and emphasizing analysis and research skills in their curricula can improve students' critical thinking skills. This improvement, in turn, will allow students to think analytically so that they will be better information consumers, leaders, and employers.

Based on these findings, recommendations for implementing critical thinking into agricultural communications curricula are as follows:

- Identify courses appropriate for intensive, research-based writing.
- Assist other agriculture disciplines in implementing critical thinking-building assignments into their courses.
- Provide opportunities for real-world, practical projects.
- Incorporate case studies into courses. These case studies could result in class debates, criticism, and role-playing.
- Incorporate varying viewpoints about agriculture so students can ask questions and make decisions based on differing views.
- Emphasize analysis of information, not just "finding" information.

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