Readership Assessment of Missouri's *Discover&Enlighten:* Implications for Publications and Teaching Programs

Sharon Wood-Turley
Mark Tucker

Abstract

Readership analyses are among the most common types of evaluation research in agricultural communications today. The research reported here was undertaken to measure the effectiveness of *Discover&Enlighten*, a monthly newsletter published by the University of Missouri's College of Agriculture, Food and Natural Resources.

This study employed mail survey methods. A total of 335 reader names were randomly selected from the 2,700-member mailing list for inclusion in the sample. A structured questionnaire developed by the researchers assessed readers' perceptions of the newsletter, their interest in various topics, and selected demographic characteristics. Descriptive and multivariate statistics are reported based on 150 completed questionnaires, or a total response rate of 45 percent.

Findings indicate that respondents desire a mix of stories ranging from natural resources to life sciences to production agriculture. Findings also indicate generally positive perceptions toward the newsletter and delivery methods. Nearly 90 percent of the respondents indicated that *Discover&Enlighten* is a truthful source of information. Fewer than one fourth indicated a preference for receiving the newsletter electronically rather than in print form. The theoretical model developed to predict reader preferences for receiving the newsletter was shown to be only slightly successful.

Research

A unique feature of the research was that it involved undergraduate agricultural journalism students who participated in all phases of the study. An overview of this activity is provided, along with recommendations for other agricultural communications instructors to consider when including students in their research.

Introduction and Purpose of Study

Readership analyses are among the most important types of evaluation research in agricultural communications today, particularly in determining which media are most appropriate in targeting information to key stakeholder groups (Boone, Meisenbach, and Tucker, 2000). Such studies represent one of the most cost-efficient and direct ways of staying in touch with readers' needs and interests (Redding, 1982).

The collective results of recent agricultural communication research suggest that audience preferences and readership tend to be highest for publications considered by readers to contain relevant, credible information that is well-written and effectively designed (Connors, Elliot, and Heinze, 1994; McGinley, 1993; Mueller, 1989; Tucker, Wood-Turley, and Truong, 1997).

The research reported here was undertaken to measure the effectiveness of *Discover&Enlighten*, a monthly newsletter published by the University of Missouri's College of Agriculture, Food and Natural Resources. The two-page newsletter features news about faculty and students at the college, including updates on research, teaching, and extension. Its 2,700-member audience includes legislators, agricultural industry leaders and other MU administrative offices. No formal evaluation has been conducted on the publication since its inception three years ago. Results from this study are reported in the context of improving newsletters as a communication tool for colleges of agriculture. In addition to reporting descriptive statistics, the researchers also developed and tested a theoretical model to identify factors hypothesized to predict preference for receiving the newsletter.

A unique feature of the research is that it involved senior undergraduate agricultural journalism students who participated in all phases of the project to satisfy requirements in the academic program's capstone course, Agricultural Journalism 320, Agriculture and the Media. The decision to include students in the

project was based on the growing evidence in the literature that experience in the research[1] process is beneficial for undergraduate communication students. For instance, Prior-Miller and Terry (1992) indicate that many entry-level media and communication positions require some knowledge of quantitative and related analytical skills to interpret and apply findings from readership studies and other types of research. Denham (1997) argues that a basic understanding of research can help beginning writers understand how research data can be used by groups to support specific political agendas. Such skills are particularly important in agricultural and environmental communication (Boone et al., 2000). The paper concludes with recommendations for instructors to consider when incorporating similar research projects and experiences into their undergraduate course work.

Methods

Mail survey research techniques were employed in the study. The researchers randomly selected 335 names from the December 2001 *Discover&Enlighten* mailing list to achieve a sampling margin of error of .05 (Krejcie & Morgan, 1970). A two-page instrument was developed to measure readers' editorial interests, perceptions of the newsletter, and various personal characteristics. A number of attitudinal items and scales were adapted from previous readership research conducted by the authors (Tucker et al., 1997). Content validity of the instrument was established by submitting the questionnaire to a group of Extension and Agricultural Information editors and college administrators who receive the newsletter. Several items were revised based on the field test.

On January 21, 2002, the instrument, cover letter, and self-addressed, stamped return envelope were mailed to the 335 readers in the sample. An MU College of Agriculture, Food and Natural Resources letter opener was included in the mailing as an incentive to improve response (Dillman, 2000). The cover letter explained the purpose of the study, including that the project was part of students' agricultural journalism capstone course. All of the students' signatures appeared on the letter as well as the instructors'. One month later, a second mailing was sent to nonrespondents that included another copy of the questionnaire, a self-addressed, stamped return envelope, and a revised cover letter urging them to complete and return the questionnaire.

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Based on the two mailings, a total of 150 completed questionnaires were returned for a usable response rate of 45 percent. The response rate was judged satisfactory given the exploratory purposes of the study and the typically moderate rates of return for mailed readership surveys (Wimmer & Dominick, 1987).

Descriptive and multivariate analyses were conducted using the Statistical Package for the Social Sciences (SPSS). To assess reliability, item analysis was conducted on two attitudinal scales used in the instrument (Mueller, 1986). Alpha levels for the two scales were judged adequate for study purposes and are discussed in the multivariate analysis section of the paper.

The researchers tested for nonresponse error by comparing early and late respondents on selected study variables in the manner prescribed by Miller and Smith (1983). Subjects responding before the second mailing were coded as early respondents, and those responding after the second mailing were coded as late respondents. According to this scheme, nonrespondents are assumed to be similar to late respondents. Statistically significant differences between early and late respondents would indicate the possibility of nonresponse error and the need for caution in generalizing results to the sample. T-tests were used to compare group means on selected study variables. Statistically significant differences were detected between early and late respondents for one of the study variables. Therefore, findings from this research are generalized only to study respondents.

Findings

Demographic items included on the questionnaire provide a general profile of respondents' personal characteristics. Approximately three-fourths (76.7%) of the respondents were males. About one-third (34.7%) of the respondents indicated they were in the 36-to-50 age category, while a similar percentage (32%) indicated they were in the 51-to-65 age group. About 20 percent indicated being over age 65. Most (89%) of the respondents had completed a bachelor's degree, and almost half (45%) had completed a master's. More than half (56.7%) had received at least one degree from the University of Missouri. The major occupational categories listed by respondents were education (29.3%), crop production (14%), marketing/management (13.3%), government agency employment (8.7%), and livestock production (8.7%).

Respondents were asked to give their perceptions of various aspects of *Discover&Enlighten*. As shown in Table 1, responses were scaled from 1 to 5 and recoded as necessary to ensure that higher values indicated a more favorable perception of the newsletter; lower values indicated a less favorable perception. According to the questionnaire we used, strongly agree was weighted 1, agree was weighted 2, etc., as shown in the table heading. But note that positively worded items would have a lower score according to this scheme. To correct this, we had to reverse-code the items marked with an asterisk so that positive evaluations of the publication would have a higher score. This was necessary because we used these scores in the regression model, and high scores needed to represent more positive evaluations. This is a common practice and is necessary when some items are worded positively and some negatively. *Discover&Enlighten* was ranked by a large majority of respondents as a truthful and credible source of information that is easy to read. More than half (57.4%) of the respondents indicated that they look forward to receiving the newsletter. A similar proportion (58.7%) felt that the information in *Discover&Enlighten* was not available elsewhere. Nearly half (48.6%) of the respondents indicated they would miss the newsletter if they stopped receiving it. More than half (54%) indicated they would not prefer to receive the newsletter via e-mail. About one-fourth (24.6%) of the respondents indicated they would prefer more in-depth stories in the newsletter, and more than one-third (39.4%) indicated that a dean's message should be included in every issue.

Respondents were also asked to indicate their level of interest for nine topic areas regularly featured in *Discover&Enlighten*. As shown in Table 2, mean responses ranged from 3.26 to 4.63 on the seven-point scale, indicating average to moderate levels of interest for all of the topics assessed. Agricultural production research and agricultural marketing were rated most interesting by respondents, and food processing research and international programs were rated least interesting.[2]

A separate series of items on the questionnaire asked respondents to indicate the perceived importance of factors influencing their decisions to read a publication. As shown in Table 3, up-to-date information was perceived to be the most important factor, followed by the practicality or usefulness of the information. The relatively low standard deviations for these two items indicate that respondents were in relative agreement as to their importance. The availability of in-depth articles and selection of sources

Table 1. *Respondent Attitudes Toward* Discover&Enlighten, *presented in percentages, n = 150*

Attitude statement	Strongly Agree 1	Agree 2	Neither Agree nor Disagree 3	Disagree 4	Strongly Disagree 5	MD	Mean	SD
a. *D&E* is a truthful source of information*	21.3	64.0	9.3	0.7	0.0	4.7	4.11	.58
b. Writing in *D&E* is easy to read*	15.3	73.3	6.7	0.0	0.0	4.7	4.09	.47
c. *D&E* is a credible source of information*	20.7	62.0	12.0	0.7	0.0	4.7	4.08	.61
d. *D&E* makes me more aware of CAFNR activities*	16.0	68.0	10.7	0.7	0.0	4.0	4.04	.55
e. Photos in *D&E* draw me into the stories*	6.7	62.7	23.3	2.7	0.7	4.0	3.75	.65
f. I look forward to receiving *D&E*	8.7	48.7	35.3	2.0	0.7	4.7	3.66	.70
g. Information in *D&E* not available elsewhere*	4.7	54.0	30.0	6.0	0.0	5.3	3.61	.68
h. I would prefer to receive *D&E* via email	4.7	6.7	29.3	42.7	11.3	5.3	3.52	.97
i. I would like to receive *D&E* less often	0.7	2.0	53.3	35.3	3.3	5.3	3.41	.63
j. Would not miss *D&E* if I stopped receiving it	3.3	12.0	30.0	43.3	5.3	6.0	3.38	.91
k. Stories in *D&E* are too short	0.0	4.7	54.7	30.7	3.3	6.7	3.35	.63
l. *D&E* is only publication I receive from CAFNR	3.3	28.7	16.7	37.3	8.0	6.0	3.19	1.1
m. I am actively involved in CAFNR activities	6.7	24.7	32.0	21.3	8.7	6.7	3.01	1.1

* Items scaled 5 to 1, strongly agree to strongly disagree. These items were reverse-coded so that positive evaluations would have a higher score. This is a common practice and is necessary when some items are worded positively and some negatively.
MD = missing data; SD = standard deviation.

Table 2. *Respondents' Level of Interest in Various Topics, presented in percentages, n = 150*

Topic	Level of interest							MD	Mean	SD
	None	Slight			Moderate		High			
	0	1	2	3	4	5	6			
a. Agricultural production research	2.0	2.7	2.7	9.3	20.0	29.3	31.3	2.7	4.63	1.41
b. Agricultural marketing/econ.	1.3	2.7	6.0	10.0	18.7	32.7	23.3	5.3	4.46	1.40
c. Upcoming events	0.7	2.7	4.7	22.7	20.0	29.3	16.7	3.3	4.21	1.32
d. Life sciences research	0.0	2.7	8.0	18.7	27.3	24.7	15.3	3.3	4.13	1.29
e. Natural resource programs	0.0	2.7	10.0	20.0	22.0	25.5	16.0	4.0	4.10	1.35
f. Student stories	0.7	2.7	10.0	22.7	24.0	26.7	9.3	4.0	3.92	1.30
g. Innovative teachers	2.0	0.7	8.7	24.0	24.0	30.0	6.0	4.7	3.90	1.26
h. Food processing research	2.7	0.7	12.7	20.7	22.7	26.0	9.3	5.3	3.85	1.39
i. International programs	3.3	4.0	20.7	29.3	22.0	10.7	6.7	3.3	3.26	1.39

MD = missing data; SD = standard deviation.

Table 3. *Perceived Importance of Items Influencing Respondents' Decisions to Read a Publication, presented in percentages, n = 150*

Item	Perceived importance								MD	Mean	SD
	None		Slight			Moderate		High			
	0	1	2	3	4	5	6				
a. Up-to-date information	0.0	0.0	1.3	2.7	9.3	44.7	37.3		4.7	5.20	.83
b. Practical or usable information	0.0	0.0	0.7	4.7	18.0	40.7	32.0		4.0	5.03	.89
c. Short articles for quick reading	0.0	0.0	1.3	6.7	20.0	40.7	27.3		4.0	4.90	.94
d. Use of photos	1.3	0.7	6.0	16.7	17.3	35.3	18.7		4.0	4.38	1.31
e. Sources used in a story	0.0	0.0	4.0	21.3	32.7	27.3	10.7		4.0	4.20	1.04
f. Use of in-depth articles	0.0	5.3	9.3	23.3	21.3	31.3	5.3		4.0	3.83	1.29

MD = missing data; SD = standard deviation.

("selection of sources" refers to the perceived credibility or relevance of the sources, not how many) used in the story were rated least important among all the items assessed.

In addition, respondents were asked to express their level of agreement with several statements designed to show how they read *Discover&Enlighten*. As shown in Table 4, nearly three-fourths (72.7%) of the respondents indicated they read entire articles of interest to them. More than half (57.3%) indicated looking in the newsletter for people they know. About one-fourth (26%) of the respondents indicated they read only headlines and captions; a similar number (26%) indicated reading the first two or three sentences of each story. Just under one-fourth (22.7%) indicated reading the entire newsletter.

Finally, respondents were asked to rank six items according to their value as sources of information about the MU College of Agriculture, Food and Natural Resources. The six sources were *Mizzou Magazine* (the MU alumni magazine), the local university extension center, contact with faculty, contact with students, *The Source* (a quarterly college magazine), and *Momentum* (a quarterly college tabloid newspaper). Contact with faculty and the local university extension center were the sources judged most important by respondents. The two college publications (*The Source* and *Momentum*) were judged least important. However, mean values on the five-point scale ranged only from 3.43 to 2.79, indicating average levels of perceived importance for all of the items assessed and relatively little variance from the most favored to least favored.[3]

Multivariate findings. Stepwise regression analysis was used to test the performance of the theoretical model developed to predict respondents' preferences for receiving the newsletter. Regression analysis allows researchers to assess the influence of each independent variable on a dependent variable while other variables are held constant (Pedhazur, 1982). The dependent variable in the analysis, named "Preference for receiving D&E," was a single-item indicator that measured respondents' level of agreement with the statement, "I would not miss *Discover&Enlighten* if I stopped receiving it" (see Item J, Table 1). The item was scaled 1 to 5 so that higher values corresponded to a positive preference for receiving the newsletter, while lower values corresponded to no preference for receiving it.

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Table 4. *How Respondents Read D&E, n = 150*

	Readers (%)	MD (%)
a. Read entire articles of interest	72.7	6.0
b. Look at all the photos	62.0	6.0
c. Look for people I know	57.3	6.0
d. Read only headlines and captions	26.0	6.0
e. Read first 2 or 3 sentences of each story	26.0	6.0
f. Read the entire newsletter	22.7	6.0

MD = missing data.

Three independent variables were hypothesized to explain variance in the dependent variable. The first independent variable, termed "publication characteristics," was a composite measure of perceived truthfulness, readability, credibility, and value in building awareness of college activities (see Items A, B, C, and D, Table 1). Items were scaled 1 to 5 and coded so that higher values corresponded to more positive evaluations of the characteristic assessed. Item analysis was used to assess reliability of the scale, resulting in an acceptable alpha coefficient of .80.

The second independent variable, termed "Interest in subject matter," was a composite measure of respondents' level of interest in nine topic areas regularly featured in the newsletter: natural resource programs, agricultural production research, international programs, innovative teachers, agricultural marketing/economics, food processing research, life science research, upcoming events, and student stories (see Table 2). Items were scaled 0 to 6, with higher values corresponding to greater levels of interest. Item analysis of the scale resulted in an acceptable alpha coefficient of .76.

The third independent variable was a single-item indicator used to assess whether respondents were MU graduates. Those who were not MU graduates received a value of 1, and those who were MU graduates received a value of 2.

To test for multicollinearity among the independent variables, a correlation matrix was generated and inspected for the presence

of any excessive intercorrelations that could bias regression findings. None were noted.

The resulting regression model is shown below. Coefficients are provided in standardized form and an asterisk (*) is used to denote the single variable significant beyond the .05 level.

$$Y = .418x_1{}^* + .036x_2 + .029x_3$$

Adjusted R-Square: .167

where Y is "Preference for receiving D&E,"

x_1 is "Interest in subject matter,"

x_2 is "Publication characteristics," and

x_3 is MU alumni status.

As shown, only one variable, "Interest in subject matter," was statistically significant. The adjusted R-square of .167 indicates that reader interest explains about 17 percent of the variance in respondents' preferences for receiving the newsletter.

Discussion and Conclusions

Results reported here add to the existing literature on readership analysis in agricultural communication. Communication specialists from other universities can use elements of this research as a tool to assist in evaluating their own publications or in planning similar research.

Findings show that respondents are generally pleased with the *Discover&Enlighten* newsletter. Based on these results, MU administrators concluded that the newsletter is an effective means of communicating with their target audience. Another positive outcome of the study was that it helped clarify to administrators not only the importance of editorial research, but also the capability of agricultural journalism staff to conduct such studies and apply their findings in useful, practical ways. Administrators expressed a desire for readership information on every college publication to ensure that external communication is kept as cost-effective as possible, particularly during the current difficult budget environment. Research-based information for decision-making is particularly important in tempering some administrators' perceptions that print publications should be discontinued in favor of Web publications. Additional research is planned to track readers' preferences for electronic delivery of information.

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The large number of neutral responses for some items suggests that the audience may be too broad for the specialized information carried in the newsletter. Top administrators agreed that the list should be trimmed to focus on the target audience. First priority: state legislators, the Vice Chancellor's Leadership Council, and MU administrators. Second priority: Opinion leaders within the agriculture community, and members of the MU Farms and Centers advisory groups. Third priority: Major donors, and current and former ag alumni board members. Based on this finding, the mailing list has been cut from 2,700 to fewer than 1,500.

Another adjustment made as a result of the research is that the editor and writers are focusing more heavily on stories that tell about the impact the college is having on the lives of Missourians and less on campus activities, guest speakers, and award winners. Administrative support for this move would have been difficult to secure without empirical findings from this research.

The theoretical model was only slightly successful in identifying factors thought to influence respondents' preferences for receiving *Discover&Enlighten*. As shown in previous studies, reader interest in the subject matter was the single most powerful predictor of preference for receiving the publication. Neither positive perceptions of the publication nor alumni status were shown to predict a preference for receiving the newsletter. These findings were contrary to expectations. The R-square value of .167 means that the one-variable model was unable to account for about 83 percent of the variance in respondents' preferences for receiving the publication. Additional work is needed to identify other factors that might account for this variance.

Agricultural and applied communicators should periodically conduct their own readership studies to determine what topics are of most importance to their audiences. There is much value in sharing research-based editorial information with administrators from time to time, particularly when there is evidence of changing reader interests or demographics.

The research also yielded valuable information to agricultural journalism instructors on the best way to integrate an applied research project into the undergraduate curriculum. Based on students' evaluations of the course and faculty observations on the overall experience, we are convinced that this is not only a valid use of class time and student effort, but that it adds a unique dimension to students' degree programs. In the MU

agricultural journalism program, this is often the only opportunity students have to see a communication research project through from start to finish. Students assisted in developing research questions, selecting the appropriate methodology, designing the instrument, implementing the mailings, entering and analyzing the data, and presenting and interpreting findings to the clients. While we would emphatically encourage other agricultural communications faculty to integrate similar research projects and experiences into their curricula, we would offer a few pieces of advice in this regard.

First, we think it is important to keep in mind that even small research projects require a complex skill set that is outside the scope of most undergraduate students. It has been our experience that the basic process of conducting research is foreign to most students. For many, this will be the first time to conduct and write literature reviews, design questions, or analyze basic quantitative or qualitative data. For students to appreciate the kind of critical thinking required of a researcher, they must be allowed to devote their full attention to the process. Therefore, we would encourage instructors to make research the main focus of the course rather than attempt to handle it as one module among many during one semester.

In addition, to use limited class time most effectively, faculty should have all "front work" completed before the beginning of the semester, such as securing funds for the research, equipping workstations with appropriate software, and printing of envelopes or other materials, depending on the research methodology to be used. Student tasks should be assigned during the first week of the term and the research timeline or schedule strictly enforced to ensure that work is completed by the semester's end.

Setting and enforcing a final deadline is important for obvious reasons, but also because of the necessity of having time for students to report their findings through a presentation to their clients. We observed that students particularly began to take ownership of the project when it came time to prepare and present the findings. We felt that much of the student learning in the course took place during the final week, as students wrote informal scripts and notes in preparation for the presentation of findings to their peers and college administrators. We strongly recommend requiring a formal presentation as part of the project and attaching course points to this activity.

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Another important consideration for instructors is the challenge of keeping students engaged and interested in the research process throughout the semester. This is especially true when the whole class is working on a single group project, such as the one reported in this paper. Group research projects can result in less student engagement, leading to a less satisfactory experience. An alternative for smaller classes (fewer than eight to 10 students) is to structure the course so that students may work individually or in pairs on research projects in which they have personal interests. Obviously, individual projects will require more faculty time, but the dividend is students' higher level of participation and learning.

Regardless of the particular objectives or methodology used in a research project, we believe that agricultural communication students will benefit from exposure to the concepts and skills gained through the experience. A major benefit is the knowledge gained that research, like journalistic writing, is a subjective process in which the potential for error is always present. Such insights are best gained from direct experience rather than course lectures.

We strongly encourage other faculty to build a structured research component into their curricula. The experience strengthens students' portfolios regardless of the specific career area they plan to enter and is particularly valuable for those considering graduate school (Woirhaye & Menkhaus, 1996). It also sends a clear message that professionalism in our discipline is based not only on applied skills, but also on the conduct and application of research to guide our editorial efforts and serve our clients and audiences.

Endnotes

[1]The term "research" is sometimes used in journalism literature to refer to reporters' use of online databases, the Internet, and traditional sources to gather information for news stories (Bolding, 1996). However, as used in this paper, "research" refers to the use of social scientific methods and empirical observation to discover or generate new information about a particular issue or topic (Anderson, 1987).

[2]Additional results of analyses are available directly from the authors upon request.

[3]The absence of *Discover&Enlighten* from the list of publications we asked respondents to rank as sources of information about the

MU College of Agriculture, Food and Natural Resources was an oversight and one that will be corrected if the research is conducted again.

Keywords: Readership analysis, newsletters, agricultural journalism education

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About the Authors

Sharon Wood-Turley is an assistant professor of agricultural journalism at the University of Missouri-Columbia and an ACE member. Mark Tucker is an assistant professor of agricultural communications at Ohio State University and an ACE member.