

# **Communication Training Needs of Agricultural Faculty Members at a Non-Land-Grant Institution: Self-Reported Use, Comfort with, and Importance of Communication Skills**

## **Abstract**

*Studies often push for more science communication, but do not delve into exactly which communication skills or material to cover during training. This can be especially difficult for non-land-grant universities where outreach is encouraged, but little guidance is given to faculty members on how to accomplish this. This study measured the frequency of, comfort with, and importance of several communication skills according to faculty members of the agricultural college within [University], a non-land-grant university, in order to inform effective future communication training. The data indicated that training should not focus on public speaking or editing for grammar and clarity, which had high Use and Comfort Scores. Nor should training focus on descriptions and persuasion of importance. Instead, practical application and implementation skills should be used. Low Use scores may also indicate lack of time for faculty to practice their communication skills despite being encouraged to participate in outreach. This study should be duplicated with other non-land-grant and land-grant institutions.*

## **Introduction**

At land grant colleges of agriculture, faculty have a responsibility to communicate their expertise and research findings. Training for these expectations comes in various forms. However, at many non-land-grant colleges of agriculture, training is limited, yet an unwritten expectation for outreach exists (Association of Public & Land-Grant Universities, n.d.). However, this trend is shifting as many agricultural stakeholders recognize the need for scientists to more effectively communicate their research findings to agricultural producers, granting agencies, media, and sometimes lawmakers.

Although there is research concerning training needs for land-grant faculty (Bowman, Settle, North, & Lewis, 2018), little to no research exists on training needs of non-land-grant faculty. In this study, we explore the communication training needs of faculty at a non-land-grant university by identifying their perceived levels of communication skill use, comfort, and importance. In return, faculty communications training programs will be developed based on these findings.

Rogers' (2003) Innovation Diffusion Process was the theoretical framework used to guide this study. The innovation-decision process consists of five stages: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003). Individuals gain an awareness of the innovation in the knowledge stage and develop an attitude, either favorable or unfavorable, in the persuasion stage. In the decision stage, actions are taken that lead to the choice of whether or not the innovation should be adopted. Individuals make use of the innovation in the implementation stage and make a re-assessment of whether the innovation best met their needs and should continue to be used in the confirmation stage. Perceptions during the knowledge and persuasion stage influence the degree of implementation (Rogers, 2003). This theory was used to evaluate the stages of communication skill adoption that agricultural college faculty members at a non-land-grant university were in to assess their communication training needs.

## Research Objective

The purpose of this study was to assess current communications activities, and understand communication training needs, of faculty members in the college of agriculture at a non-land-grant university. In order to measure the current need for communication training topics, the following research objective was used:

RO: Describe the use, comfort, and importance of communication skills according to agricultural faculty members at a non-land-grant university.

## Methods

A quantitative approach was employed to observe and measure self-reported use, level of comfort with, and importance of various communication skills for participants. An electronic Qualtrics survey was emailed to all faculty members within the college of agriculture ( $N = 116$ ) at [University] excluding professors of agricultural education or agricultural communications. Faculty in these areas were not included to avoid skewing the results since education and communications are very communication-driven areas. Seventy faculty members responded with 58 completing the survey for a 50% completion rate. The initial email was sent on December 12, 2018 and two follow-up emails were distributed in January 2019. Data collection was completed on January 27, 2019.

A majority of the questions used in the survey were based on a communication activities survey used in Bowman et al.'s (2018) study. The Extension survey was originally designed for Mississippi State Extension personnel (Bowman et al., 2018). The final instrument for this study was created and organized into communication categories after an extensive review of the literature. It was also reviewed by a panel of experts at [University]. The questionnaire asked participants to describe how often they use certain communications skills (1 = *never*; 5 = *daily*), how comfortable they are utilizing them (1 = *very uncomfortable*; 5 = *very comfortable*), and how important it is for them to do so (1 = *unimportant*; 5 = *important*).

Cronbach's alphas were calculated for each section of the questionnaire (Use, Comfort, and Importance). Reliability for each section of the questionnaire ranged from .85-.93, which is acceptable according to Kline (1999). Means of participants' Use, Comfort, and Importance scores for each communication skill, communication skill category, and academic department were calculated using SPSS. An ANOVA was used to determine whether differences between academic departments' scores existed.

## Results

Results for the mean Use, Comfort, and Importance scores of each communication activity are found in Table 1. "Editing for writing and grammar clarity," "making a speech or presentation," "writing a handout for class," "writing a business letter," and "taking photos" had the five highest-scoring averages across all three categories (Use, Comfort, and Importance). "Creating Snapchat posts" had the lowest Use ( $M = 1.87$ ,  $SD = .38$ ), Comfort ( $M = 2.44$ ,  $SD = 1.05$ ), and Importance ( $M = 1.98$ ,  $SD = 1.30$ ) mean scores.

Table 1  
*Agricultural Faculty's Use, Comfort, and Importance of Communications Activities*

| Activity   | Use <sup>1</sup><br>M (SD) | Comfort <sup>2</sup><br>M (SD) | Importance <sup>3</sup><br>M (SD) |
|--|----------------------------|--------------------------------|-----------------------------------|
| Edit writing for grammar & clarity                                   | 4.41 (.82)                 | 4.62 (.85)                     | 4.94 (.23)                        |
| Make a speech or presentation  | 3.88 (.90)                 | 4.47 (.98)                     | 4.89 (.37)                        |
| Write a handout for class  | 3.48 (1.11)                | 4.53 (.92)                     | 4.65 (.71)                        |
| Write a business letter  | 3.09 (1.27)                | 4.25 (1.08)                    | 4.28 (1.19)                       |
| Take photos  | 2.97 (1.08)                | 4.16 (1.01)                    | 3.91 (1.43)                       |
| Edit photos  | 2.28 (1.12)                | 3.47 (1.15)                    | 3.20 (1.43)                       |
| Shoot video  | 2.03 (.92)                 | 3.07 (1.23)                    | 2.94 (1.45)                       |
| Create Facebook posts  | 2.02 (1.18)                | 3.02 (1.33)                    | 2.41 (1.43)                       |
| Work with local media to get coverage of departmental events/stories | 1.72 (.67)                 | 3.20 (1.28)                    | 3.45 (1.41)                       |
| Edit video   | 1.59 (.82)                 | 2.42 (1.20)                    | 2.65 (1.47)                       |
| Manage a Facebook page   | 1.59 (1.20)                | 2.76 (1.31)                    | 2.13 (1.44)                       |
| Write a press release  | 1.55 (.71)                 | 3.51 (1.09)                    | 3.09 (1.35)                       |
| Interviews for radio   | 1.55 (.57)                 | 3.05 (1.45)                    | 3.26 (1.36)                       |
| Maintain a personal website  | 1.55 (.86)                 | 2.93 (1.33)                    | 2.72 (1.52)                       |
| Write a news story   | 1.53 (.68)                 | 3.33 (1.19)                    | 2.91 (1.34)                       |
| Write an editorial column  | 1.47 (.80)                 | 3.45 (1.27)                    | 3.07 (1.45)                       |
| Other social media tasks   | 1.47 (1.13)                | 2.56 (1.14)                    | 2.11 (1.33)                       |
| Design a promotional handout   | 1.45 (.65)                 | 2.96 (1.17)                    | 2.94 (1.50)                       |
| Manage a Facebook group  | 1.43 (1.03)                | 2.69 (1.26)                    | 2.09 (1.35)                       |
| Write for webpages   | 1.41 (.70)                 | 2.93 (1.18)                    | 2.78 (1.46)                       |
| Interviews for television  | 1.38 (.49)                 | 2.78 (1.37)                    | 3.15 (1.34)                       |
| Create webpages  | 1.38 (.70)                 | 2.49 (1.28)                    | 2.59 (1.46)                       |
| Write an educational newsletter                                      | 1.36 (.64)                 | 3.35 (1.19)                    | 3.17 (1.31)                       |
| Create Instagram posts   | 1.36 (.89)                 | 2.51 (1.03)                    | 2.06 (1.30)                       |
| Write a promotional newsletter                                       | 1.36 (.64)                 | 3.27 (1.24)                    | 3.11 (1.34)                       |
| Design a newsletter  | 1.33 (.63)                 | 2.87 (1.22)                    | 2.43 (1.44)                       |
| Manage a blog  | 1.21 (.70)                 | 2.55 (1.25)                    | 2.15 (1.27)                       |
| Write for a blog   | 1.16 (.56)                 | 2.56 (1.26)                    | 2.15 (1.31)                       |
| Create Snapchat posts  | 1.09 (.39)                 | 2.44 (1.05)                    | 1.98 (1.30)                       |
| Total  | 1.87 (.38)                 | 3.18 (.60)                     | 3.01 (.77)                        |

Note. <sup>1</sup>Where 1 = never, 5 = daily. <sup>2</sup>Where 1 = very uncomfortable, 5 = very comfortable. <sup>3</sup>Where 1 = unimportant, 5 = important

Scores for each general communications category were also calculated. Results are listed in Table 2. Overall, public speaking had the highest average Use ( $M = 3.88$ ,  $SD = .90$ ), Comfort ( $M = 4.47$ ,  $SD = .98$ ), and Importance ( $M = 4.89$ ,  $SD = .37$ ) scores. Online communication skills had the lowest average Use scores ( $M = 1.34$ ,  $SD = .44$ ), while Social Media had the lowest average Comfort scores ( $M = 2.66$ ,  $SD = 1.03$ ) and Importance scores ( $M = 2.13$ ,  $SD = 1.25$ ).

Table 2  
*Agricultural Faculty's Use, Comfort, and Importance of Tools by Communication Category*

| Communication Category    | Use <sup>1</sup><br><i>M (SD)</i> | Comfort <sup>2</sup><br><i>M (SD)</i> | Importance <sup>3</sup><br><i>M (SD)</i> |
|---------------------------|-----------------------------------|---------------------------------------|--|
| Public Speaking           | 3.88 (.90)                        | 4.47 (.98)                            | 4.89 (.37)                               |
| Writing                   | 2.28 (.51)                        | 3.79 (.81)                            | 3.65 (.76)                               |
| Photo & Video             | 2.22 (.82)                        | 3.28 (.91)                            | 3.18 (1.19)                              |
| Media Relations           | 1.55 (.48)                        | 3.01 (1.25)                           | 3.29 (1.29)                              |
| Social Media              | 1.49 (.63)                        | 2.66 (1.03)                           | 2.13 (1.25)                              |
| Design                    | 1.39 (.59)                        | 2.92 (1.15)                           | 2.69 (1.37)                              |
| Online (Not Social Media) | 1.34 (.44)                        | 2.69 (1.11)                           | 2.48 (1.17)                              |

Note. <sup>1</sup>Where 1 = never, 5 = daily. <sup>2</sup>Where 1 = very uncomfortable, 5 = very comfortable. <sup>3</sup>Where 1 = unimportant, 5 = important

ANOVA revealed a significant difference in average Use scores by academic department (Table 3) ( $F(4, 47) = 7.84$ ,  $p < .001$ ,  $\eta_p^2 = .40$ ). The alpha level was set at .05 a priori.

Table 3  
*Ag Faculty's Use, Comfort, and Importance of Communications Activities by Department*

| Department                         | Use <sup>1*</sup><br><i>M (SD)</i> | Comfort <sup>2</sup><br><i>M (SD)</i> | Importance <sup>3</sup><br><i>M (SD)</i> |
|------------------------------------|------------------------------------|---------------------------------------|--|
| Landscape Architecture             | 2.45 (.57)                         | 3.61 (.93)                            | 3.70 (.85)                               |
| Natural Resources Management       | 2.18 (.37)                         | 3.10 (.76)                            | 3.38 (.96)                               |
| Animal and Food Sciences           | 1.85 (.25)                         | 3.01 (.41)                            | 2.93 (.73)                               |
| Plant and Soil Science             | 1.82 (.31)                         | 3.41 (.56)                            | 3.05 (.72)                               |
| Agricultural and Applied Economics | 1.51 (.25)                         | 3.05 (.44)                            | 2.47 (.47)                               |
| Significance                       | $p < .001$                         | $p = .18$                             | $p = .10$                                |

Note. <sup>1</sup>Where 1 = never, 5 = daily. <sup>2</sup>Where 1 = very uncomfortable, 5 = very comfortable. <sup>3</sup>Where 1 = unimportant, 5 = important

An SNK post hoc test revealed that faculty in the Agricultural and Applied Economics ( $M = 1.51$ ,  $SD = .25$ ), Plant and Soil Science ( $M = 1.82$ ,  $SD = .31$ ), and Animal and Food Science ( $M = 1.85$ ,  $SD = .25$ ) departments used communication skills the least but did not statistically differ from one another. Plant and Soil Science, Animal and Food Sciences, and Natural Resources Management ( $M = 2.18$ ,  $SD = .37$ ) also did not differ statistically, but were higher than the

previously mentioned set. Natural Resources Management and Landscape Architecture faculty ( $M = 2.45$ ,  $SD = .57$ ) also did not differ statistically, but used communication skills more often than other departments. Alternatively, ANOVA revealed that belonging to a certain department did not have a significant effect on the faculty members' Comfort ( $F(5, 47) = 1.61$ ,  $p = .18$ ,  $\eta_p^2 = 2.58$ ) or Importance ( $F(5, 47) = 1.98$ ,  $p = .10$ ,  $\eta_p^2 = 5.45$ ) scores.

### **Conclusions/Recommendations**

Scores from 1 – 2.34 were considered low, 2.35 – 3.69 were moderate, and 3.70 – 5 were high. Public Speaking had a high average Use, Comfort, and Importance average score, which aligns with the Confirmation stage. Writing had a low average Use, moderate Importance, and high Comfort score. This indicates that faculty are very comfortable with written communication such as editing, writing news stories, and writing a business letter, but rarely use this skill and believe it is only moderately important. Social Media, Photo & Video, Design, Online communication, and Media Relations also had a low average Use score, but moderate Comfort and Importance scores. This indicates that although faculty are somewhat comfortable with these skills, they do not use them very often. Due to the low average Use scores of Social Media, Writing, Photo & Video, Media Relations, Design, and Online communication, these skills can be considered to be in the decision stage of the Innovation Diffusion Process (Rogers, 2003). The faculty have already distinguished the importance of these skills but are deciding whether to implement them. Social Media communication had low average Use and Importance skills, but a moderate Comfort score. Social Media seems to have reached the decision stage but was rejected.

The main goal of this study was to understand the communication training needs of agricultural faculty members at a non-land-grant university. Future training for these faculty members should not include Public Speaking. Faculty are already comfortable with this skill and use it frequently. Instead, training should focus on how faculty can practically apply their Social Media, Writing (but not editing for grammar and clarity, which had the highest use and comfort scores), Photo & Video, Media Relations, Design, and Online communication skills. Participants were highly to moderately comfortable with these skills, and believed them to be at least moderately important, but rarely utilized them. Training should focus on implementation instead of giving descriptions of what the skill is and persuading faculty to use them. An example of this might be showing examples of a personal website and then helping faculty taking the first steps to create their own.

All college departments had moderate to high average Comfort and Importance scores, which were revealed to not differ statistically. All colleges had low average Use scores except Landscape Architecture, which had a moderate average score. This confirms that more practical application and implementation training is needed, particularly with departments other than Landscape Architecture.

Low average Use scores may also indicate that faculty do not prioritize, or have time for, outreach. Future research should further study this issue. The researchers also recommend duplicating this study with agricultural college faculty at other universities, both land-grant and non-land-grant to compare results.

## References

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