

Encouraging the Proper Communication Skills for Our Students

Session Facilitators and Contributors

Robert L. Andrews,

Virginia Commonwealth University,
Department of Supply Chain Management and Business Analytics,
Richmond, VA. 23284-4000, 804-828-7101, randrews@vcu.edu

Wilma M. Andrews,

Virginia Commonwealth University, Department of Information Systems,
Richmond, VA. 23284-4000, 804-827-0956, wandrews@vcu.edu

Annie M. Stith-Willis,

Virginia Commonwealth University,
Department of Supply Chain Management and Business Analytics,
Richmond, VA. 23284-4000, 804-828-7111, amstithw@vcu.edu

ABSTRACT

The session will emphasize the importance of including communication for our graduates and the importance of making effective communication a part of each class. This may include communication focused activities but also includes being an example of effective communication. The session will encourage attendees to participate and enter into discussion about the points made.

INTRODUCTION

Faculty providing classroom instruction are expected to be experts in their field of study. They have studied in their discipline for years to be able to garner the respect of their peers and the students they instruct. Very few have performed the functions required by the jobs that their students will obtain after they graduate. Their tendency is to provide the students with the knowledge about the academic discipline and to communicate that knowledge in a way that is similar to the way they received it from their instructors. Their academic preparation most likely did not include any preparation on how to communicate effectively in the classroom. As such, the instructor does not serve as an effective role model for the students relative to making a professional presentation that will be clearly understood by the target audience.

IMPORTANCE OF COMMUNICATION IN ANALYSIS FOCUSED CLASSES

The American Statistical Association is creating four courses covering the topics of Presenting Skills, Influence and Leadership Skills, Personality Training and Team Building, and Career Planning. Robert Starbuck [5] reports that this is because “these topics are not routinely included in academic degree programs.” In this article, W. Scott Clark, a senior director at Eli Lilly and Company, refers to the Eli Lilly leadership development program saying, “Because of our leadership development, I’ve seen big changes from even some of my experience staff. Their conscious efforts on communication skills and improving their influence on senior leaders have really made a difference.”

Analytics and the use of Big Data are receiving a great deal of attention in the business arena. However, Kristian Hammond [3] states, “We will need systems that not only perform data analysis, but then also communicate the results that they find in a clear, concise narrative form.” This emphasizes that the usefulness of data and the analysis of that data are no better than the ability to effectively communicate the findings in a clear and concise way to a decision maker so that the decision maker feels confident in using the results to make a better decision. The bottom line value of an analysis depends on the final story that is told to the decision maker. In this process of analyzing data, it is important to get good data and have good analysis skills but a great analysis of pertinent data is no better than the ability to communicate the findings to decision maker so that it can lead to a better decision. This is another illustration of the commonly use idiom, “A chain is no stronger than its weakest link.” Unfortunately for many faculty our weakest link, and consequently that of our students, is the ability to communicate effectively to the target audience.

Hahn and Doganaksoy [2] reported on “Traits of a Successful Statistician” based on the experience of practicing statisticians. Several of these traits included things that are typically taught in statistics classes, but they also included communications and related skills that are typically not taught in statistics classes. Specifically they state, “You must speak the language of your customers and not expect them to be proficient in yours. ... You have to get across key ideas, conclusions, and recommendations succinctly and effectively in one-on-one or small-group settings, more formal presentations, and written communications. The ability to be quick on your feet is an important part of communicating effectively.”

Andrews, Custer and Gilbreath [1] reported on the faculty effort at Virginia Commonwealth University to identify a set of necessary skills for business analytics. Based a series of discussions with and feedback from analytics professionals that included representatives from IBM and Capital One, they ended up with a final essential set of five general skills. These skills were:

- Work in a collaborative environment.
- Translate a specific business question into a problem that can be solved using appropriate data.
- Acquire and organize appropriate data so that it can be used for analysis.
- Know general principles and common tools and be able to apply them to analyze specific business problems.
- Develop and effectively communicate an actionable solution for the specific business question.

Of these five essential skills the first two and the last two involve the ability to communicate effectively.

David Rodgers [4] makes comments mainly in reference to masters’ level in quantitative areas saying that students “need versatile and flexible skill sets that will not only make them employable but keep them employed. It is our duty to not only teach concepts, modeling, algorithms and solution approaches but also to emphasize communication, teamwork, interpersonal skills and applications to real-world projects. The most important of these are communication skills, and short of not offering classes in such, we can emphasize written proposals, final reports, interpersonal oral communication, and presentations skills. We can

stress appropriate virtual communication, e.g., e-mail, texting or instant messaging.” However, we believe that this statement can be made for students in undergraduate programs and for virtually all academic disciplines. He summarizes his comments on the importance of communication skills with a clear and succinct statement with which we wholeheartedly agree. “Nothing else much matters if it cannot be communicated coherently, succinctly and with confidence.”

REPORT ON AN EXERCISE INVOLVING CLASSROOM PRESENTATIONS

This is a report of the personal experience of Dr. Robert Andrews. I wanted to give my students experience presenting to an audience that did not have the same level of knowledge as the presenters. Often students present to their classmates, who have the same knowledge about the class material. During the spring semester of 2013 I had two classes that met back-to-back on the same evening. My graduate introductory statistics class, had taken a quiz and some people did not do as well as they had hoped so there was a request for an extra credit assignment. The second class, an applied multivariate statistics class, was studying factor analysis and I wanted to give them an assignment having teams of students performing a factor analysis on a set of data with 21 variables. At the same time I wanted to give them experience presenting to an audience that did not have the same level of knowledge as those presenting. I gave them an assignment to report specific recommendations and factor analysis results in three-person teams. An additional component of the assignment required them to prepare a presentation to summarize their findings to present to an audience whose knowledge level of statistics was an understanding of basic statistics such as the mean, standard deviation of variables along with correlation and simple linear regression between variables. They were told that those in the audience would judge the presentation based on how well they understood what was presented.

The introductory class was given the opportunity to earn extra points by doing a short report based on the mean, standard deviation of the 15 variables and all possible correlations between the variables. In addition, they had to attend and evaluate the presentations of the other class. Having them perform the descriptive analysis for the same data set eliminated the need for using part of the presentation time for describing the data. 11 students from the introductory class choose to do the work for the extra credit, including attending the presentations.

I asked the 11 introductory students to rate each team and then asked them to tell what was the most compelling factor for assigning the best ranking. These responses are summarized below in Table 1 with the bold face font added by me to highlight points I thought were particularly important.

Table 1: Summary of Student Responses to the First Question

What was the most compelling factor for assigning the best ranking?
Boiled down concepts in understandable way; they did not over-explain; "less is more..."
I understood the problem as they took me through it. They told the story from beginning to end and allowed me to follow it. Had they gone first, I would have understood the problem much better as the other groups presented.
Group 4 was personable, organized, knowledgeable and comfortable with presenting the information and to an audience. I enjoyed their presentation because it was easier to understand.
Bringing the data back to non-statistical terms makes the info easier to understand. Instead of just stating a number they explained what that number meant.
How comfortable they were with what they were presenting . And the knowledge of what they were trying to explain
Spoke clearly, and seemed like they knew what they were talking about, used great examples , explained in laymen terms .
Felt they hit all the targets. Did very well in explaining the information. Offered great visual aid .
Tell the whole story of the presentation with a conclusion.
The ability to understand the content and how well the group performed as a whole
1) How the group/s knew the purpose of the data. 2) How the group/s, being well-informed, if they were, knew how to handle and present the data. More importantly 3) How they integrated their statistical knowledge with explaining the data.
Explanation of the analysis at a level I could understand.

Similarly I asked them to tell what was the most compelling factor for assigning the lowest ranking. These responses are summarized below in Table 2 with the bold face font added by me to highlight points I thought were particularly important.

Table 2: Summary of Student Responses to the Second Question

What was the most compelling factor for assigning the lowest rank?
No real direction - jumped right into data - did not setup what they were talking about - didn't take a 30,000 foot view
Not that they didn't know the material, but they just didn't get the story across. I didn't understand any more when they finished than when they started about what their task was, let alone how they solved the problem. The difficulty is that some people regardless of how they understand material, they have inherent personality issues that make them most uncomfortable with presentations. I noticed that even though the English language was a barrier for most of the groups, group number 4 had the same issue and overcame the English language barrier with great visuals and an extraordinarily well organized presentation. It requires more practice with story-telling than just understanding the material.
The presentation was organized, professional and clearly stated the direction/goal of the assignment.
Clarity of info.
Knowledge of what was presented.
Well organized and able to follow throughout presentation without getting lost. Seemed to be very knowledgeable about what they presented
Didn't show their conclusion.
My ability to think back and recall something that I learned/remembered from each section being ranked
The completeness as to how they conveyed this information. For example, the first person in group 3 was, I thought, the overall best. With that said, group 4 gave the best presentation, because I found it concise, informative, and deliberate. For example, they defined the statistical terms as they were used, unlike that of group 2.
Delivery of the presentation and ability to understand what was being presented.

This was definitely a good learning experience for the applied multivariate class and in addition to the extra points all indication was that it was a good experience for the introductory class. It was certainly an eye-opener for me. I was disappointed in how poorly the majority of the groups did in using their analysis to tell a story that the intended audience could understand. I clearly need to work on doing a better job in the future of working on developing the communication skills of my students and continuing to develop their problem solving and quantitative skills.

SUMMARY

Our academic classes mainly focus on the specific academic area and do little to work communication skills that will most likely be more important for the future success of the student than knowledge of the specific academic area. For the sake of our students we need to do to assist them with development of their communication skills no matter how important we think the knowledge of our academic discipline is to the students. We endorse with confidence David Roger's statement, "Nothing else much matters if it cannot be communicated coherently, succinctly and with confidence."

REFERENCES

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