

PRD GIFT Winner AEJMC 2020

**Graph Interpretation Exercises for the Public
Relations Classroom: An Environmental
Scanning Approach**

Lauren Bayliss, Georgia Southern University

Editorial Record: Submitted to AEJMC-PRD GIFT Competition by Feb. 21, 2020. A blind copy was peer reviewed by the PRD Teaching Committee, led by Chair Chris McCollough, and selected as a Top GIFT. Top GIFT winners were notified on April 1, 2020. First published online on August 15, 2020.

Rationale

The activities in this exercise allow public relations students to practice using data for environmental scanning (see Appendix A for the assignment description). Graphs make data accessible to students even if they have never studied statistics or quantitative methods. Students take part in a series of short, in-class exercises using graphs derived from *The New York Times*' "What's Going on in this Graph?" series (The Learning Network, 2019). A few questions suggested by *The New York Times* are used to warm up, and then the instructor introduces a think-pair-share activity (Kaddoura, 2013) created specifically for the public relations classroom. Students brainstorm different ways the data in each graph could influence strategic decision-making for different organizations, discuss ideas with a partner, and then share with the rest of the class.

Students engage in these short activities during several consecutive classes. In a second, related exercise, students complete a similar out-

of-class assignment for which they find their own graphs that could be used as part of environmental scanning. The exercises teach students to use commonly available data for strategic thinking as part of the environmental scanning process.

Student Learning Goals

These exercises have the following goals:

- To promote students' ability to interpret graphs as part of environmental scanning.
- To promote students' ability to brainstorm strategies based on quantitative data.

The Connection to Public Relations Theory and Practice

The practice of environmental scanning requires practitioners to seek information “about publics, about reactions of publics toward the organization, and about public opinion toward issues important to the organization” (Dozier, 1986, p. 4). Both formal and informal environmental scanning practices have long been considered important for public relations managers (Dozier, 1986), as well as for entry-level practitioners (Manley & Valin, 2017). Using graphs for environmental scanning practice is additionally helpful because public relations students need to be able to use quantitative data for strategic decision making (Commission on Public Relations Education, 2018). By using graphs, students can become comfortable with this format for gathering information as a part of environmental scanning.

Evidence of Student Learning Outcomes

In anonymous surveys distributed online after the fourth day of the in-class activity, students were asked to describe recent interactions with quantitative data. Although the students were not specifically asked about the environmental scanning activities, eight out of 23 students alluded to these activities. Of these mentions, five were positive, two were somewhat negative in that they mentioned students' perceptions that such

activities were challenging, and one was neutral (see Appendix B). Finally, outcomes for the learning goals were assessed using the second out-of-class assignment; see Appendix C for examples of student work from the out-of-class activity used for assessment.

References

- Commission on Public Relations Education (2018). *Fast forward: Foundations + future state. Educators + practitioners: The Commission on Public Relations Education 2017 report on undergraduate education*. <http://www.commissionpred.org/commission-reports/fast-forward-foundations-future-state-educators-practitioners/>
- Dozier, D. M. (1986, August 3-6). *The environmental scanning function of public relations practitioners and participation in management decision making*. [Paper presentation]. Annual Conference of the Association for Education in Journalism and Mass Communication, Norman, OK, United States. <https://eric.ed.gov/?id=ED274978>
- Kaddoura, M. (2013). Think pair share: A teaching learning strategy to enhance students' critical thinking. *Educational Research Quarterly*, 36(4), 3-24.
- Manley, D., & Valin, J. (2017). Laying the foundation for a global body of knowledge in public relations and communications management. *Public Relations Review*, 43(1), 56-70. <https://doi.org/10.1016/j.pubrev.2016.10.018>
- The Learning Network. (2019, August 27). Looking for graphs to use in the classroom? Here are 34. *The New York Times*. <https://www.nytimes.com/2019/08/27/learning/looking-for-graphs-to-use-in-the-classroom-here-are-34.html>

Appendix A

Assignment Instructions

For these assignments, all graphs were drawn from *The New York Times*' educational series "What's Going on in this Graph?" (The Learning Network, 2019). However, any graphs that can be used for environmental scanning may be appropriate.

For each in-class assignment, four slides were used. The text for the first three slides was adapted from the "What's Going on in this Graph?" original exercises. The text for the fourth slide was created by the instructor to adapt this exercise to the practice of public relations and prepare students to use data in periodicals for environmental scanning.

Part I: In-Class Exercise Slides

General format for lecture slides for the exercise (for each slide, the graph appears on the right and the text appears on the left):

Slide 1: What do you notice?*

Slide 2: What do you wonder?*

Slide 3: What's going on in this graph?*

Slide 4: Think - Pair - Share**

- What sort of businesses or organizations could make strategic decisions based on this information?
- What sorts of strategic decisions could they make based on this information?

* This text is taken from "What's Going on in this Graph?" exercises created by *The New York Times* (The Learning Network, 2019).

** Original content

Graphs and Graphics Used for Part I

Class 1

- A graph plotting the percentage of nutritionists versus the percentage of all Americans who think that various foods are healthy.
 - Graph taken from: <https://www.nytimes.com/2017/10/09/learning/whats-going-on-in-this-graph-oct-10-2017.html>
 - Instructor's note: Instructors may also draw bar graphs on a whiteboard to explore data for individual foods as part of the class exercise (i.e., to compare how many nutritionists versus other Americans thought specific foods were healthy).
- A map of the United States demonstrating social connectedness via the likelihood of Facebook friendship between different counties.
 - Graph taken from: <https://www.nytimes.com/2019/01/03/learning/whats-going-on-in-this-graph-jan-9-2019.html>
 - Instructor's note: Because this graph is interactive, graphs for three counties were selected and screenshots were taken to share with the students: of their own county, the county of the nearest major metropolitan city, and Brooklyn, NY.

Class 2

- Miles spent cruising waiting for clients versus the number of trip requests per hour for a ridesharing service.
 - Graph taken from: <https://www.nytimes.com/2019/04/11/learning/whats-going-on-in-this-graph-april-17-2019.html>
- The percentage of first-time mothers in each age group in 1980, with a second graph showing the same information for 2016.

- Graphs taken from: <https://www.nytimes.com/2018/11/22/learning/whats-going-on-in-this-graph-nov-28-2018.html>
- Instructor's note: Later in the semester, the graph of the distribution for 2016 was used as an example of a bimodal distribution and sparked a discussion about segmenting publics.

Class 3

- The relationship between increasing/decreasing fast food sales and increasing/decreasing national wealth for various countries.
 - Graph taken from: <https://www.nytimes.com/2018/10/16/learning/whats-going-on-in-this-graph-oct-17-2018.html>
- The percentage of music sales for different genres of music for both traditional sales and streaming only.
 - Graph taken from: <https://www.nytimes.com/2019/01/31/learning/whats-going-on-in-this-graph-feb-6-2019.html>

Class 4

- Two different graphs depict education among young adults in several countries; the first examines whether young adults achieve higher levels of education than their parents and the other depicts how many young adults achieve levels of education beyond high school.
 - Graphs taken from: <https://www.nytimes.com/2019/09/26/learning/whats-going-on-in-this-graph-oct-2-2019.html>
- Baseball players' salary compared to their skill (as measured by wins above replacement).
 - Graph taken from: <https://www.nytimes.com/2019/04/11/learning/whats-going-on-in-this-graph-april-17-2019.html>
 - Instructor's note: This graph provided an opportunity to discuss how a lack of a relationship (correlation) can be interesting.

Furthermore, several students suggested that the cases may have been picked to prove a point and that the sample may not be representative, leading to a discussion of sampling methods.

Part II: Out-of-Class Activity

(For examples of student work, see Appendix C)

Instructions: Find a graph in a newspaper, magazine, or reputable blog. In one sentence, explain the main takeaway of the graph. Then, explain how the graph could be used for environmental scanning:

1. Identify one specific organization not mentioned in the article that could use this information.
2. Describe the strategic decision(s) the information could influence.
3. Include a link to the article that contains the graph.

Appendix B

Anonymous Survey Student Comments

Positive:

“The last time that I was involved with data interpretation was in class when we talking [sic] about what is going on in each graph. I feel confident in interpreting the basic ideas from graphs. For instance, I can usually tell what is going on and what the graph is measuring. However, I do not feel confident in interpreting statistics of graphs. Although I can determine what type of correlation the graph has based on the picture, I cannot give anyone information regarding the t-value or correlation coefficient. I am feeling a little behind in class for the statistics chapter. However, I am excited to learn more about interpreting numbers and graphs.”

“I have gained more experience in interpreting graphs in PR Research. I

feel like it has helped my understanding of different types of data. I also monthly go over social media numbers for [name of university] Athletics' social media account and I try to place why we did well in social media or not so well. For example, if we have bad social numbers, it's typically because we aren't winning as much. I also try to distinguish trends in that data. I've noticed that people tend to comment/reply more if there is a bad game or the team isn't doing well, but more likely to retweet or like things if the team is doing well and winning."

"I have taken STATS 2000, which is my most recent use/knowledge of data interpretation. I also have learned a good bit so far in my Research class."

"In my PR Research class we analyze and discuss graphs. I enjoy it because it helps me get a better understanding of all the components needed to make a good graph."

"I have recently in class identified graphs and explained what the graphs mean. I feel confident when using numbers-based information and graphs. Numbers are easy to interpret and when they are displayed on a graph, it is easy to visualize."

Somewhat Negative:

"In class, we had to interpret a scatter plot without a title and that was a little difficult personally because I just felt like more information was needed."

"My most recent experience[s] with data interpretation have been in PR Research where we look at various different kinds of graphs and interpret what exactly is happening within the graph. We try to draw correlations

and causations from each graph and understand how the experimenters got to their date [sic] conclusions. I am still working on interpreting graphs, some are easier to understand than others. It is often times hard to draw correlations and figure out how the graph data came to be. I do not like using numbers-based information because I personally have never been good at interpreting numbers.”

Neutral:

“In class, besides that, I do not remember the last time I had to interpret data on a graph.”

Appendix C

Examples of Student Work for Second Student Activity

(All Examples are Used with Permission)

Name: Graham Cooper

Short paragraph identifying organization and decision:

The graph I have chosen breaks down the turn out [sic] of elections based on ethnicity and age between 2016 and 2018. This graph can be used by polling offices to try and figure out how to get more people to come out and vote, seeing as people always complain of low turn out [sic]. The polling centers could try and make choices of what groups of people they would want to target to come out or how to get younger people to come out, seeing as they are the lowest on this graph.

Link: <https://www.washingtonpost.com/wp-apps/imrs.php?src=https://arc-anglerfish-washpost-prod-washpost.s3.amazonaws.com/public/WOIC6QJEFBFFNKKBFKISD6GA34.jpg&w=1023>

Name: Removed at student's request

Short paragraph identifying organization and decision:

The graph I used shows the trend of the 2019-2020 flu occurrences in the United States compared to that of recent years. The graph can be used by school systems as they prepare for the absences as well as spread awareness to their respective communities about preventative measures against the flu. Teachers can use this information for their self awareness, but also so that they can work days into their schedules to help students keep up.

Link: <https://www.cnn.com/2020/01/07/health/northeast-flu/index.html>

Name: Removed at student's request

Short paragraph identifying organization and decision:

This graph shows how the sales for a new app differ between Apple iOS and Android. The Apple app was released first and had 443 downloads within the first week. After a high demand for an Android version, the new adaption only had 150 downloads during the first week. It was clear that the Apple app was more successful in sales than the Android app. The article discusses how developers could use this information to figure out who they want their target public to be. If Apple is more successful with sales, then they should target Apple users. One organization that could use this information would be Apple and Android. Android can use this information to figure out why Apple is more successful in this area and change its marketing strategy. Apple can use this information and conduct further research to find what makes its iOS so successful and continue on that path.

Link: <https://www.forbes.com/sites/ewanspence/2014/04/29/this-graph-is-the-reason-developers-should-target-ios-over-android/#664452724b8b>