

Melissa Schlank - Nature of Science and Math

Article - Math Made Me a Packers Fan and It's Going Great

Part A - NGSS

- Scientific Knowledge is Based on Empirical Evidence

The author of the article ranked the importance of different criteria in choosing a sports team to support and used the resulting data. I am certainly not arguing that the support of a sports team is based solely on criteria and data (as a long suffering Mets fan, I can attest to that), but the knowledge about the team itself is. The most important factors to the author in choosing the team were the likability and honor of the players, followed by their ability to win. The explanation as to why the Packers is the best team in this regard was supported by the empirical evidence about the players. Although the author does not give background into the algorithm used, the data is empirical and was verified throughout the season.

- Scientific Knowledge is Open to Revision in Light of New Evidence

The author of the article chose the criteria, and although it was not explicitly said, it's possible that she would rethink her choice if the results to some of the higher ranked criteria changed. If players on the team were suspended, especially for crimes against women (a rating she gave a weight of 1.98, the highest of all factors), the team might not rate as favorably compared with others in the NFL. "Distance from the team's stadium in St. Louis" was rated 0.94 in importance as a team to support. I would argue that this deserved a higher ranking because she stopped supporting the Rams when they left St. Louis. Science is constantly changing and what we know can only be true as long as the facts stay the same. Once new evidence becomes available, whether it's about football teams or something more inherently scientific, our knowledge continues to be revised.

(As a side note, I looked up the author to see if she is still a fan of the Packers after the 2016-2017 season, but could not find any information. Perhaps she is, but perhaps new evidence has changed her scientific knowledge of the Packers.)

- Science Investigations Use a Variety of Methods

Besides the algorithm that used the ranked criteria to predict that the Packers were the best team for the author to support, she still had to actively become a fan of the team. In determining her team to support, she used an empirical procedure, but in becoming a fan her approach was not quite the same. She had to learn the players, watch the game, and become invested. If watching the game became tedious or if the team did not perform as the algorithm predicted it would ultimately have been proven wrong. There is no

one correct method in conducting a scientific investigation, and as such there was more than one way to become a fan of the Packers.

Part B - Common Core Mathematics Practices

- Model with mathematics

An algorithm, based on rankings, was used to choose the NFL team to support. Statistical ratings had to be given to certain factors and weighted by importance. Models are often used to simplify complicated situations, and this aligns with using straight math to choose a sports team, as there are usually more factors that go into it. People still need to analyze the models and draw their own conclusions. Revisions can be made with additional data to make more effective models. If after the first season, the author now has more information, a new model can be run that may or may not give the same result.

- Make sense of problems and persevere in solving them

When presented with a problem, the author used math to solve it. She analyzed the criteria, constraints, and goals in order to form a solution. She could have chosen any team; one supported by friends or family, one based on simple geography, or the best team in the league. She chose, however, to use math in order to draw an empirical conclusion. She questioned whether it made sense and did not just blindly trust the math.

- Attend to precision

The author presented her problem, criteria, and solution. She listened to the critiques of others and was able to accurately express the mathematics used to come to her conclusion. She carried out the plan of becoming a fan of the Packers by watching games, following statistics, and becoming emotionally invested.