

Nature of Science & Math: Analyzing the Presence in Everyday Communication

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Abstract

In the article: Beitler, J. (2017). 2017 Ushers in record low extent. *National Snow and Ice Data Center*. This is an excellent article that demonstrates the importance of Media following the tenets on the Nature of Science and practices in Common Core Mathematics. It is vital when reading reports that they be reliable and accurate sources of information. The average reader may not spend time researching claims and checking sources.

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Tenets of the Nature of Science as discussed by the NGSS

*Scientific Knowledge is based on Empirical Evidence*, or evidence that is based less on theory and more on observation and experimentation. Beitler does an excellent job of linking data results from observations to her report. The data is from reputable and professional sources rather than speculation and politically driven sources. For example, when discussing possible causes to Arctic sea ice declines, the author quoted data sources reporting air temperature changes over the past few years and the resulting sea ice changes. Beitler provided Empirical Evidence from NSIDC courtesy NOAA/ESRL physical Sciences Division as well as NASA scientist Richard Cullather.

*Scientific Knowledge is open to revision in light of new evidence*. In the paragraph Conclusions in Context, Beitler mentions that outcomes in future data reports are not determined. “Whether the winter of 2016 to 2017 will end up warmer remains to be seen;” (Beitler 2017) The author does not make predictions, yet gives way to possibilities of other explanations depending on future data.

In the paragraph: Overview of Conditions, the author discussed similarities between January ice extents in 2006 with those of 2017, both months having similar data collections.

*Scientific Knowledge assumes an order and consistency in Natural systems*. Beitler demonstrates this in her article with multiple comparisons to historical data collection and how it relates to current trends in sea ice levels. She gives data to previous Arctic Pressure changes and the resulting air temperatures, sea ice data comparisons from 1980-2017, Historical arctic atmospheric conditions and that impacts these have on sea ice levels.

Practices in Common Core Mathematics Practices

*Model with Mathematics*. Beitler gives plenty of data. And with this data comes graphing and tables. She does not just throw numbers at the reader, instead breaks down the data to a more manageable level. For example, she begins the article by comparing sea ice extents over a 35 year span with scientific and “laymen’s” terms. She does not just leave the data in kilometers, but translates it to miles so that all readers can understand and gain a general idea of size.

*Use appropriate tools regularly*. I really feel that the inclusion of the data results depicted in multiple formats to be very beneficial in conveying the desired message. Beitler uses graphs, charts, and pictorial representations to demonstrate change over time and size. These can be seen throughout the article in the sidebar in each paragraph.

*Look for and express regularity in repeated reasoning*. Evidenced by comparing the current Jan. 2017 data to the past 35 years of data collection. Beitler does an excellent job of giving evidence to her findings by consistently comparing current trends to past data collections from multiple sources and explain out she came to these conclusions and

predictions. She does not make predictions for future results based on personal bias, and leaves the reader to make their own predictions based on the data results she has presented.

References

Article: Beitler, J. (2017). 2017 Ushers in record low extent. *National Snow and Ice Data Center*. <http://nsidc.org/arcticseaicenews/2017/02/2017-ushers-in-record-low-extent/>

