The basic principles of quantitative writing – writing that incorporates data through the use of statistics, graphs, and/or tables – are the same as those of all academic writing: make clear and concise arguments, and support all claims with appropriate evidence. Including numerical information in written work can, however, requires specific strategies to ensure that the reader understands the details and meaning of the data used. Some key tips are listed below.

Give Appropriate Context

Numbers on their own can rarely tell the whole story; your reader will need context to understand the significance of your data. When considering what background is necessary to include, ask yourself why you want to highlight a particular fact. Is it surprising? Does it represent a change? Does it continue a trend? Is it an unusually large or small statistic for some reason? Is it a positive sign? A negative one? Your reader will need that information to truly understand your argument.

For example, instead of: Germany spent €40 billion on Russian energy imports in 2021.

Try: Germany spent €40 billion (about 55% of its total energy expenditures) on Russian energy imports in 2021, more than any other nation in the EU.

Describe *and* Analyze Your Data

Make sure to both report your findings and to give your information meaning. Your reader will need your help in understanding the importance of the data that you describe and how it relates to your overall argument. If context offers background, analysis connects your information to the larger message of your writing. Think about why you are including these numbers as evidence for your claims. Do they support your argument? Do they undermine your argument, but in a way that you can explain?

For example, instead of: Preschool vaccination rates increased by 20% in 2017.

Try: When parents were offered financial compensation for their travel costs in 2017, preschool vaccination rates increased by 20%. This implies that transportation costs were a significant barrier to vaccination.

Consider Genre and Choose Appropriate Examples

It's important to consider your genre and audience when you are writing about data. If you are analyzing a data set for a quantitative researcsh methods class, you'll likely need to include a lot of detail. However, in public-facing genres like an op-ed, you will want to choose examples carefully.

In the latter instance, it is best to highlight numbers that are easy for your reader to grasp, either because they are very big or small, or because they are simple enough to be quickly understood. This may mean choosing between units and percentages, means and medians, or exact numbers and approximations.

For example, instead of: Student participation in the free school lunch program increased by 6.7% from 2019 to 2020.

Try: Student participation in the free school lunch program increased by over 6% from 2019 to 2020, with over 400 new students enrolled.

Use Effective Quantitative Comparisons

Quantitative comparisons are particularly useful when you are, for example, describing the relationship between two cases or charting progress over time. In either situation, you will want to include:

- A clear statement of what exactly is being compared. For example, are you relating data from two years, or similar programs from different regions?
- Information about the direction of difference between your points of comparison; direction describes whether your measurement is increasing or decreasing or which unit of comparison is greater or less than the other,
- A description of the magnitude of change, which describes how great the difference between the two is.

For example, instead of: The average Native American student GPA was 2.0; it is now 2.2.

Try: The average Native American student GPA increased by 10% from 2018 to 2021 (from 2.0 to 2.2).

Do Not Overwhelm Your Reader

Do not describe *all* of your data in prose; the details will overwhelm your reader and make them unsure about which piece of information is necessary for understanding your argument. Instead, choose specific, illustrative examples that make the strongest case for your argument. Do not use repetitive examples when only one will do. When appropriate, refer your reader to a visual representation of your data to see the whole picture.

For example, instead of: In 2017, 50% of patients reported high levels of satisfaction with their care; in 2018, 42% of patients reported the same; in 2019, only 38% of patients were highly satisfied, and in 2020, 35% of patients reported high levels of satisfaction with their care.

Try: The percentage of patients reporting high levels of satisfaction with their care fell from 50% to 35% from 2017 to 2020.

Additional Reading:

Miller, Jane E. *The Chicago Guide to Writing about Numbers: The Effective Presentation of Quantitative Information*. The University of Chicago Press, 2015.

Morgan, Candia. *Writing Mathematically: The Discourse of Investigation*. Routledge eBook Edition, 2003