SoTL Data Analysis

The kind of analysis you do depends on your research question and the data you collected. Quantitative data often uses statistics to answer the research question, such as comparing averages of pre- and post-tests or of comparison groups. Qualitative data is generally analyzed by systematically examining the data and looking for themes or patterns.

Quantitative data analysis

Quantitative data analysis uses statistics. Initially, you'll want to describe your data using descriptive statistics. Frequency distributions are counts of the numbers of scores, and they can be presented in a table or a graph. Measures of central tendency are numbers that represent the typical score, and the most common of these is the average (mean), although median and mode are also used. Measures of variability refer to how much the scores vary from each other as well as from the central tendency, and the most common of these is range and standard deviation.

One type of commonly used inferential statistics in SoTL research allows you to determine how likely the scores described by your descriptive statistics are different from each other, such as your pre-test and post-test. In general, if the scores have less than 5% chance of being different due to chance ($p<0.05$), then we can say that the difference between them is statistically significant—it is most likely that your instruction caused the difference.

Qualitative data analysis

Qualitative data analysis involves making sense of words and observations. Qualitative analysis is often done through content analysis, which is objective and systematic (or as much as it can be in qualitative research). To conduct content analysis, information is categorized by clear rules. These rules can be created and defined by you as you read through the data and identify the categories and themes that emerge. Or, the categories can be pre-existing, often based on a theory. Coding using rubrics is a common form of content analysis. It is helpful to keep track of quotes that are particularly good examples of the categories. It is also possible to turn qualitative data into quantitative data by doing counts.

Much of this information is modified from and inspired by the book *Engaging in the Scholarship of Teaching and Learning* (2012) by Cathy Bishop-Clark and Beth Dietz-Uhler. The CCRI Library has [multiple copies in the CTE collection](#). I encourage you to review the book for additional details, information, and examples, particularly Chapter 7 "Analyzing the Data."

SoTL Data Analysis Worksheet

Complete this worksheet to help you plan how you will analyze your data. Much of this worksheet is modified from the book *Engaging in the Scholarship of Teaching and Learning* (2012) by Cathy Bishop-Clark and Beth Dietz-Uhler, [available in the CTE Collection at the CCRI Library](#). I encourage you to review the book for additional details, information, and examples, particularly Chapter 7 "Analyzing the Data."

What is your research question?

What format is your data currently in (e.g. interviews, questionnaires, exams, essays) and what do you need to do to transform them into data that can be analyzed (e.g. transcripts, spreadsheets)?

What type of data analysis will you perform?

Are you comfortable analyzing your data? If not, where can you learn more and get help?

How do you anticipate presenting your results (e.g. numbers, graphs, table with categories, example quotes)?