

# Creating Visual Representations from Pre and Post Test Data Using Excel

1) **Set up your data.** Enter the student names or ID numbers in the first column. The next **column headings** should contain the pre/post test questions – two times (once for pre and once for post), as shown below. Add a column heading for **Sum Score** and **Mode** after the last question in each test.

2) **Entering data.** Enter numbers corresponding to Likert Scale questions. Example: enter 1 for Strongly Disagree and 5 for Strongly Agree. **If a question is left blank, leave the cell blank – do not enter 0.** Input data for each student. If multiple groups are included, assign a different color for the text of each group. Example: if you ran 3 Study Skills Groups, group one has blue text, group two has green, and group three has red.

3) **Calculate the Sum Score and Mode.** When using Likert Scale data, remember to use the Mode rather than the Mean (Average).

- To calculate the Sum Score, click in the intended cell and enter the following formula: **=SUM( )**. In between the parentheses, **highlight** the intended row or column of numbers.
- To calculate Mode, click in the intended cell and enter the following formula: **=MODE.SNGL( )**. In between the parentheses, **highlight** the intended row or column of numbers.

4) **Create Frequency Distribution Tables.**

- **Merge and Center** a group of three cells. Then, enter the text of a question from the pre/post test.
- Under the question, enter **Pre-Test** as a heading in the middle column, and **Post-Test** as a heading in the right column.
- In the left column, enter the Likert Scale text used to answer the question.

- Enter the data, which is the number of times that each answer is selected for that particular question. Example: if nine students strongly agree with question one on the pre-test, enter the number nine in the corresponding cell.
- Repeat, creating a frequency distribution table for each question on the test.

5) **Create Graphs.** Highlight a frequency distribution table (do not include the merged cell that contains the question text). Click on the **Insert** tab in the ribbon and select desired chart.

*The ability to represent the data you've collected is one of the most powerful tools a school counselor has when it comes to exhibiting your value to your school's administration, district, and community stakeholders.*



# How do I Know Which Type of Chart or Graph to Use?

Column chart	<ul style="list-style-type: none"><li>➤ Typically used to compare data across categories</li><li>➤ Usually emphasizes differences across time</li><li>➤ Oriented Vertically</li><li>➤ Numerical values are represented on the vertical axis; textual or categorical values are represented on the horizontal axis</li><li>➤ School counselors would likely use this type of chart when graphing pre and post test results.</li></ul>
Bar chart	<ul style="list-style-type: none"><li>➤ Typically used to compare multiple sets of data</li><li>➤ Is <b>not</b> normally used to highlight differences across time</li><li>➤ Similar to column chart, except Bar Chart is orientated horizontally</li><li>➤ School counselors would likely use this type of chart when graphing pre and post test results.</li></ul>
Line chart	<ul style="list-style-type: none"><li>➤ Typically used to compare data across time and track trends over time</li><li>➤ Numerical values are represented on the vertical axis; textual or categorical values are represented on the horizontal axis</li><li>➤ School counselors would likely use this type of chart when analyzing standardized test scores over a period of time.</li></ul>
Pie chart	<ul style="list-style-type: none"><li>➤ Typically used to show percentage each measurement takes of a whole</li><li>➤ Contain just one set of data (one row or column in Excel)</li><li>➤ School counselors would likely use this type of chart to display breakdowns of behavior referrals.</li></ul>
Scatter chart	<ul style="list-style-type: none"><li>➤ Typically used to compare pairs of values or multiple points</li><li>➤ Contains numerical values on both axes (no categories)</li><li>➤ School counselors would likely use this type of chart when graphing results of students' test scores.</li></ul>
3-D charts	<ul style="list-style-type: none"><li>➤ 3-D Column, Cone, or Pyramid Charts have a third axis – Depth (series axis).</li><li>➤ Depth axis represents textual or categorical data.</li><li>➤ Contains numerical values on both axes (no categories)</li><li>➤ School counselors would likely use this type of chart when creating a visual that demonstrates several variables over period of time.</li></ul>