# Histogram Activity

## Instructions

Using the first tab in the workbook labeled Histogram activity use the data age at entry and count to develop a histogram. Review the histogram and answer the following questions.

Step 1: Select cells with data. Use your curser to highlight cells A1 through B12

Step 2: Insert bar graph. On the Insert ribbon, click on 2-D Column, Clustered Column

Step 3: Insert data labels. Select the chart, then select the Design ribbon under chart tools then click on Add Chart Element, then select data labels, finally select outside end.

Step 4: Review the resulting graph and answer the following questions

## Questions about the histogram

1. With the knowledge that this state calculates age at entry by computing the difference between the birth date and the entry date, what transformations had to be made to prep the data into the table on the spreadsheet?
2. How would you describe the shape of the distribution?
3. What is the mode of the distribution?
4. How might presenting the mean of this distribution misrepresent the data?

# Row and Column Percentage activity

## Instructions

Using the second tab in the workbook labeled row and column activity use the progress category by program data to compute row and column percentages for the data

Step 1: Compute Column percentages. For each column (progress category), divide the number of children in that progress category in a single program by the total number of children in that progress category across programs.

# of children in Elite Care in Category “b”/Total number of children in Category “b”

Step 2: Compute Row percentages. For each row (program) divide the number of children in the progress category in the program by the total number of children in the program

# of children in Elite Care in Category “b”/Total number of children in Elite Care

Step 3: Review tables and answer the following questions

## Questions: Row and Column Percentage

1. Which program in these data serves the most children?
2. How does the differing number of children in each program impact interpretation of column percentages?
3. If you needed to know the percentage of children in Community Cares who made greater than expected progress should you use the row percentage or column percentage?
4. If you needed to know the percent of all children that entered and exited at age expectations (progress category ‘e’) that went to Opportunities Inc. would you use a row or column percentage?

# Ranges, Interquartile range, and standard deviation

# Instructions

The data in the variation tab were drawn from Part B Child Count and Educational Environments developed on 11/1/2017. The data display the number of children ages 3 through 5 served under IDEA, Part B, by disability and state: 2016-17. Go to the page on the workbook labeled spread.

## Questions

1. Are there outliers in these data? Which states?
2. Are the data skewed? If so, in what direction?
3. What is the Interquartile range?
4. Given the distribution of these data, what should be considered in interpreting any states value in comparison to the average across states?
5. What might be a transformation that would make these data easier to interpret across states?

# Testing Percentages

## Instructions

Step 1: Compute the total n for each group. Using the data in the ‘Testing Percentages\_raw’ tab, calculate the number of Teachers/Providers in the coaching group and the number in the No Coaching group. Record these totals in in cells B2 and B3 on the ‘Testing percentages\_analysis tab.’

Step 2: Compute the percent meeting fidelity for each group. Again using the data in the ‘Testing Percentages\_raw’ tab, compute the percentage of the teacher/providers in each group that met the fidelity criteria (Fidelity Score = 1). Record these percentages in cells C2 and C3 in the ‘Testing percentages\_analysis tab.’

Step 3: Compute the statistical significance of the difference between the two groups. Using the table you just completed on the ‘Testing percentages\_analysis tab,’ enter the total number of teachers in the coaching group into C10. Enter the percent of teachers who met fidelity in the coaching group into cell D10. Enter the total number of teachers in the NO coaching group into cell G10. Enter the percent of teachers in the NO coaching group who met fidelity into cell H10.

Step 4: Interpret the statistical significance. Look at cell P 10, was the difference between the two groups statistically significant?

## Questions

1. What happens to the confidence interval if you increase the number of teachers in each group?
2. How close do the percentages need to be to no longer be statistically significant?
3. How would you interpret the finding that the teachers with coaching performed statistically significantly better than the teachers with no coaching?

# Testing Averages

## Instructions

Step 1: Review the data in the Testing Averages tab and determine the statistical significance of the difference between the two groups.

## Questions

1. Looking at the table in the Testing Averages tab, is the difference between the two averages statistically significant?
2. How would you interpret a statistically significant difference in averages differently than a statistically significant different in the percent of teachers that met fidelity criteria?
3. Writing over the values in the table, what happens to the critical t when you increase the sample size?