

Key Practices for Visualizing Data

Teacher Education in the Federated States of Micronesia (FSM)



RATIONALE FOR INFOGRAPHICS

Educators frequently use data to make decisions about programs, policies, and instruction. Visualizing these data can make patterns and trends easier to understand, interpret, and use. Such graphics, charts, and images can communicate information to a wide range of audiences and inform decisionmaking.

Infographics are one type of visualization that generally focus on smaller data sets. They are created to convey specific information quickly, accessibly, and in a graphically compelling manner. As illustrated in the examples below, this infographic demonstrates how to visualize data from a text report to share key information about an education topic of interest. It displays data from a recent FSM report to illustrate how data can be presented in a visually effective manner.¹

COMBINING DIFFERENT TYPES OF CHARTS

Visualizing Practice: Integrate text and graphics to emphasize important information. Text can supplement images to provide a fuller picture of the context in which the data were collected. In this example, the text under the “PreK–12 Teacher Preparation and Pupil-Teacher Ratios” header below provides information about the priority area with which these data are associated and relevant definitions, and the contrasting images illustrate the differences in pupil-to-teacher ratios for qualified teachers and certified teachers in the FSM.

QUALIFIED



Across the FSM, 84 percent of PreK–12 teachers were qualified.

15:1



The pupil-to-qualified-teacher ratio was 15:1, on average.

PreK–12 Teacher Preparation and Pupil-Teacher Ratios

The FSM is seeking to increase the percentage of certified teachers in order to reduce their pupil-to-teacher ratio.

Teacher Qualification

Qualified teachers are those with an academic degree (associate degree or higher) or with a combination of a one-year career and technical education (CTE) certificate and relevant work experience.

CERTIFIED



Across the FSM, 26 percent of PreK–12 teachers were certified.

45:1



The pupil-to-certified-teacher ratio was 45:1, on average.

Teacher Certification

Certified teachers are those who meet the qualification requirements and pass the National Standardized Test for Teachers and become certified by the FSM National Department of Education.

What this display shows: The combination of donut charts and dot charts highlights the connection between the percentage of qualified and certified teachers and pupil-to-qualified-teacher/certified-teacher ratios.

Rationale for visualization: The juxtaposition of the donut and dot charts emphasizes the relationship of two different data points.

¹ Federated States of Micronesia National Department of Education. (2020). *Education Indicator Report*.

DOT CHARTS

Visualizing Practice: Simplify and reduce complexity to drive home a key point.



What this display shows: This dot chart represents the ratio of teachers across the FSM who received an associate, bachelor's, or master's degree.

Rationale for visualization:

Dot charts are one of the most efficient ways of representing ratios or proportions.

**approximate ratio*

DONUT CHARTS

Visualizing Practice: Keep visuals as clean and simple as possible while still clearly illustrating the data.



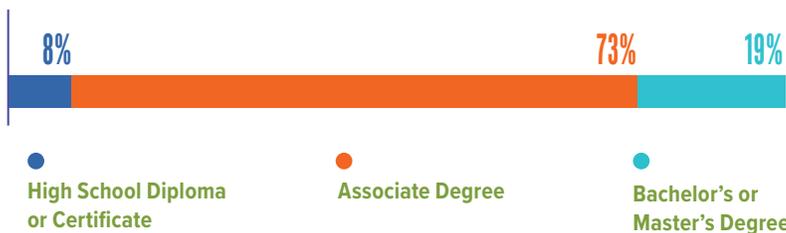
92% of FSM teachers have at least an associate degree.

What this display shows: This donut chart highlights that 92% of FSM teachers have at least an associate degree.

Rationale for visualization: Donut charts are one of the most efficient ways of representing percentages.

STACKED BAR CHARTS

Visualizing Practice: Use colors to call attention to specific information.



What this display shows: This chart shows the percentage of FSM teachers who received bachelor's/master's degrees, associate degrees, and high school diplomas/certificates.

Rationale for visualization: Stacked bar charts are used to show the parts of a whole. Using the most vibrant color to represent the largest percentage highlights that section of the stacked bar chart. The visual also conveys multiple concepts (order and distribution) through a single graphic.

KEY PRINCIPLES FOR DATA VISUALIZATION



SHOW THE DATA

Label data values and include information to help readers understand the data.



REDUCE THE CLUTTER

Prioritize key points and simplify visualizations.



INTEGRATE TEXT AND IMAGES

Use plain language to state the take-home message.



PORTRAY DATA MEANING ACCURATELY AND ETHICALLY

Consider context and audience and be mindful of bias or misinterpretations of data meaning.