

Teaching Graphical Excellence Using Media Mistakes

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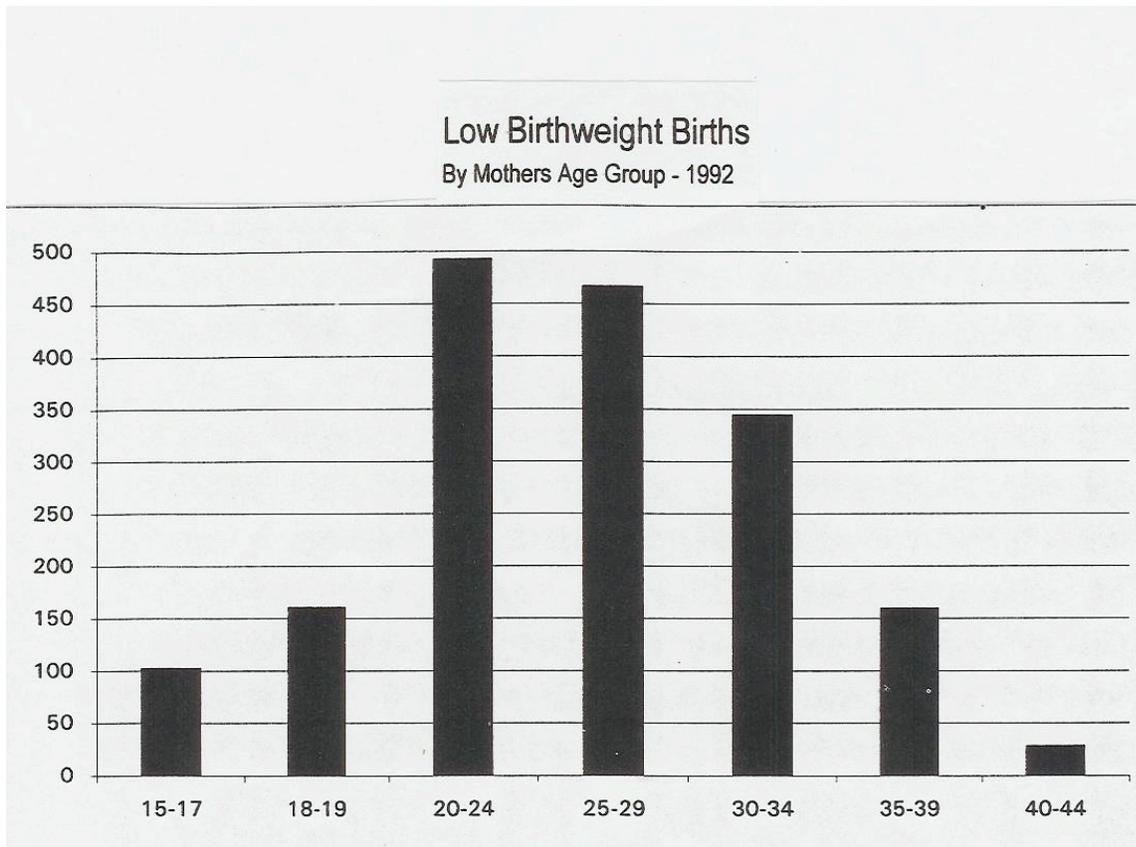
By

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Abstract: The development of graphical software makes graphical Presentation easier than ever. However, inaccurate and sometimes bizarre presentations are widespread in the media. Students can learn a great deal about excellence in data presentation by viewing and critiquing graphical mistakes, and comparing appropriate graphical presentations against graphical mistakes.

Contents of Handout: There are several presentations of graphics used in media articles that are critiqued – each with varying problems. The examples are used for student class assignments and lecture presentation.

Poster Session: The poster will compare a revised graph against the inappropriate graphs selected from the media and other publications.



Source: *State of Nevada Statistical Abstract*, 1994.

1. What problems do you see with this graph?

Answer: There are several problems with this graph:

- a) The class widths are not equal.
- b) The variable “age” is really continuous. The data may be better represented by a histogram.
- c) The data should incorporate the number of births per each age group (per capita) and not be represented by absolute count.
- d) The x and y axis are not labeled.

2. How do the problems distort the data presented?

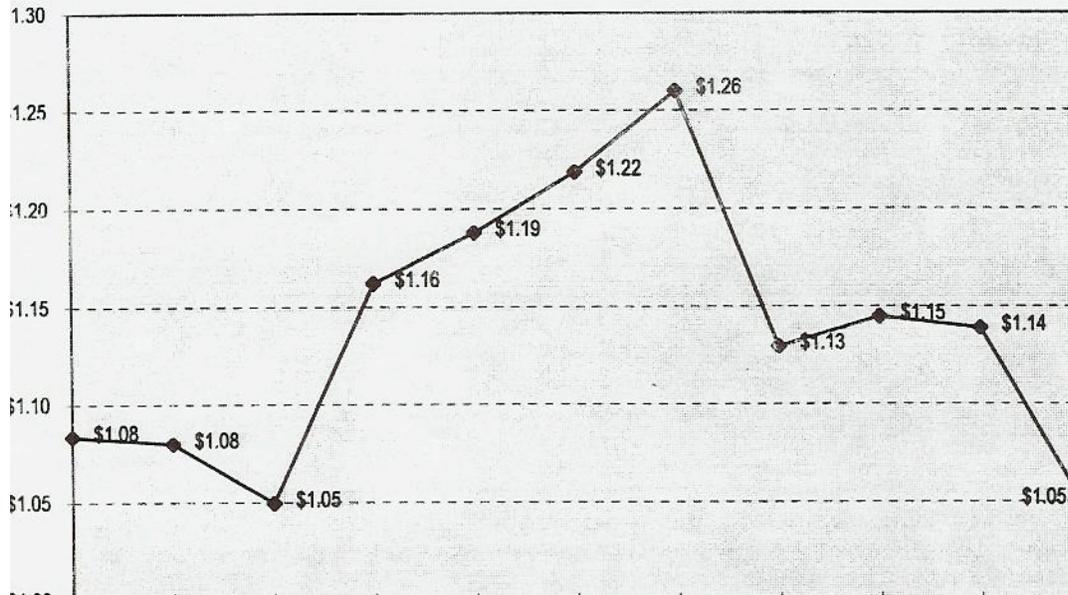
Answer: We cannot make true comparisons about low-birth weight incidence because it is very likely that a larger number of births are to women in the 20-29 year age group. Similarly – we cannot make true comparisons about low-birth weight incidence when classes are of unequal length.

3. How would you fix the problems?

Answer: A histogram would be more appropriate for this data since ages are really continuous. Make sure class widths are equal. Determine per capita low-birth rates.

4. Produce a graph that is appropriate for this data.

Self Service Gasoline Prices Western Locations May 20, 1994



Source: *State of Nevada Statistical Abstract*, 1994

1. What problems do you see with this graph?

Answer:

- a) The x and y axis are not labeled. It is difficult to tell exactly what is being graphed. After examining the text associated with the graph, the data on the x-axis was found to represent different cities.
- b) The line graph with connected points appears to be showing gasoline prices over time. However, the data is cross-sectional (taken on a single date) and not time series.

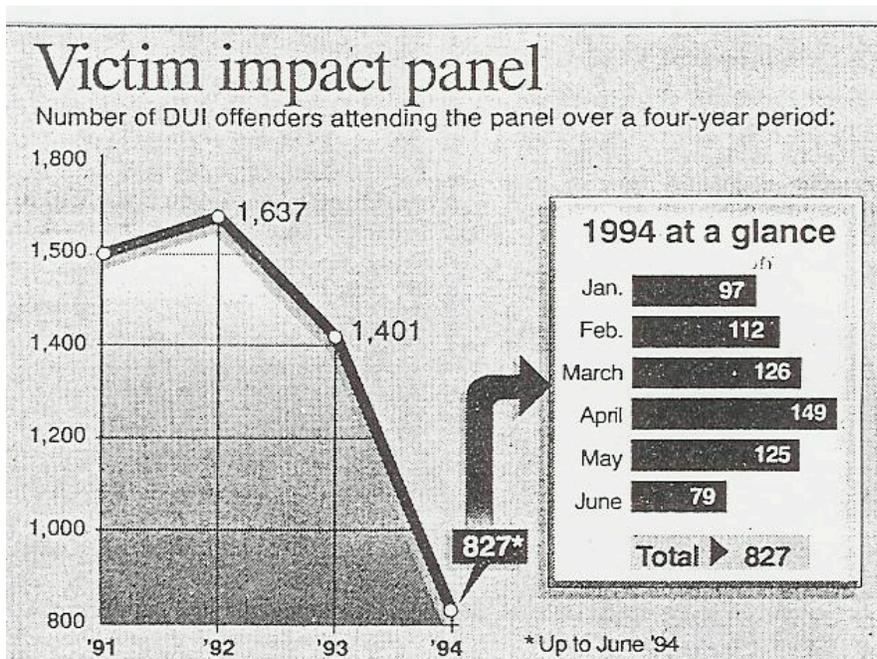
2. How do the problems distort the data presented?

Answer: The use of a line graph portrays the data as a trend of prices. The x-axis data represents different cities and the data is cross-sectional, therefore, a “trend” does not exist.

3. How would you fix the problems?

Answer: A bar graph would more appropriately show the simple comparison of gasoline prices among the various cities.

4. Produce a graph that is appropriate for this data.



Source: *Reno Gazette Journal*

1. What problems do you see with this graph?

Answer:

- The time-series graph uses unequal time widths for the classes. The data for the year 1994 is for 6 months, while the data for the years '91 through '93 are for 12 months.
- The y and x-axis are not labeled.

2. How do the problems distort the data presented?

Answer: Using only 6-month data for the year '94 (although footnoted in the graph) results in the appearance of a dramatic drop in the number of DUI offenders attending a victim impact panel. The number may, in fact, be higher for the entire year.

3. How would you fix the problems?

Answer: When presenting time series data use equal intervals of time. To make accurate comparisons of the attendance, 6-month intervals through June of each year would be more appropriate.

4. Produce a graph that is appropriate for this data.

1. What problems do you see with this graph (below)?

Answer: There is nothing “incorrect” about this presentation. However, there is a tendency, especially with today’s graphics capabilities, to over-do a presentation. Too much information on one page can obscure the point being made. Refer to the 2 bars shown under the headline International Appeal. At first glance, it is difficult to determine what the author is attempting to report because count and percent show on a single bar.

2. How do the problems distort the data presented?

Answer: The presentation is “busy” and difficult to read.

3. How would you fix the problems?

Answer: While the presentation may be acceptable in a newspaper article, avoid over-loading for a presentation. Separate the information into two or more presentations.

Source: Reno Gazette Journal 4/25/2005

