Appendix A: Data Visualization Handouts

The Data Visualization Process in Your Education Agency

Given the detailed data that are collected about the inputs, processes, and outcomes of the
education enterprise, it is not surprising that discerning the meaning of data is a challenge for
education stakeholders, including practitioners, policymakers, researchers, parents, and the general public.

The ability to create customized, audience-specific data visualizations can become a fundamental and powerful aspect of a
broader organization-wide analytical and communications strategy. Data visualization focuses on presenting information
in a way that is not only accurate and appropriately comprehensive, but also understandable and actionable for each of
your intended audiences.

When applied effectively, the sound data visualization approaches below will improve a viewer’s ability to understand,
analyze, and retain information and, subsequently, use that knowledge to make decisions.

Four Key Principles for Effective Data Visualization
Key Principle 1: Show the data.
Key Principle 2: Reduce the clutter.
Key Principle 3: Integrate text and images.
Key Principle 4: Portray data meaning accurately and ethically.

Seven Recommended Practices for Data Visualization
Recommendation 1: Capitalize on consistency.
Recommendation 2: Data that should not be compared should not be presented side by side.
Recommendation 3: Don’t limit your design choices to default graphing programs.
Recommendation 4: Focus on the take-home message for the target audience.
Recommendation 5: Minimize jargon, acronyms, and technical terms.
Recommendation 6: Choose a font that is easy to read and will reproduce well.
Recommendation 7: Recognize the importance of color and the benefits of Section 508 compliance.

Six-Step Process for Data Visualization
Step 1. Question: Someone Needs Information
Step 2. Research: Data Exploration and Analysis
Step 3. Findings: Data Meaning/Answer
Step 4. Customization: Audience-Specific Messaging
Step 5. Visualization: Present Data Meaning Clearly and Accurately
Step 6. User Feedback: Review and Refine Efforts

For more information about these data visualization process, principles, and recommended practices, download the free

Appendix A: Data Visualization Handouts
Data Visualization

Display (or show) the data (Key Principle 1)
Avoid or reduce clutter (Key Principle 2)
Text and images must be integrated (Key Principle 3)
Accurately and ethically portray data meaning (Key Principle 4)

Verify quality of data
Invest in more than default programs
Side-by-side presentations only when comparison is intended
Use a format that is easy to read
Avoid multiple fonts
Less is more
Images distinguishable by contrast not color
Patterns and F patterns are effective
Accessibility necessitates Section 508 compliance
Take-home message is the priority
Insight is preferable to hindsight
Observe size and position hierarchy to indicate importance
Not all data need to be visualized

For more information about the data visualization process, principles, and recommended practices, download the free Forum Guide to Data Visualization: A Resource for Education Agencies at http://nces.ed.gov/forum/publications.asp.