

Keep It Simple to Avoid Data Distractions

EDUCATORS OFTEN embellish charts with colorful pictures and designs to engage students in learning new material, but such well-intentioned efforts can end up making graphics more difficult for children to read and can hinder their learning, according to the article “Extraneous Perceptual Information Interferes with Children’s Acquisition of Mathematical Knowledge,” by Jennifer Kaminski and Vladimir Sloutsky, which was published in the May 2013 issue of the *Journal of Educational Psychology*.

Researchers showed 16 kindergarten and elementary school teachers the graphs pictured below and asked if the charts with colorful objects displayed within the bars would be more effective than charts with solid bars in teaching their students how to read charts. Fourteen teachers said the graphs with colorful objects would be more effective, and two teachers said they would not use the solid-bar graphs at all. All 16 teachers said they would use the graphs with colorful objects in their teaching.

The researchers also conducted four separate experiments with students

interpreting bar charts. In one experiment, researchers taught 122 6- to 8-year-olds how to read basic bar charts representing quantities of different objects (shown on the y-axis) at different times (shown on the x-axis). While some of the charts featured solid bars, others depicted the same information with stacks of countable objects inside the bars. When the researchers first taught students how to interpret the charts, the number of objects stacked in each bar equaled the number of items shown on the y-axis. For instance, as shown in the shoe chart below, in week 1, the number of shoes in the Lost and Found is five, and so five shoes are shown inside the column for week 1.

Researchers then tested students with new charts in which the number of countable icons did not always equal the y-axis. They found that instead of correctly reading the y-axis, many students counted the icons in each stack. All of the first- and second-graders and 75 percent of the kindergartners who had been taught to read the solid-bar charts correctly read the new charts. But for

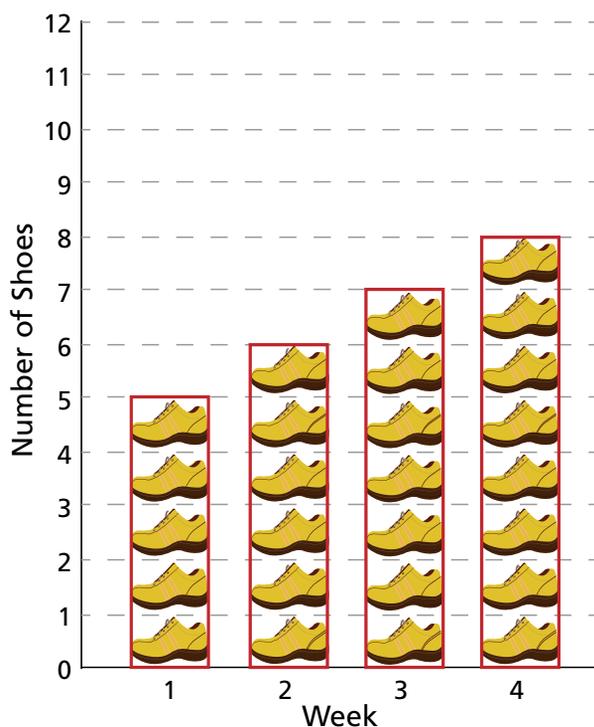
students who learned to read bar charts with countable objects, 90 percent of kindergartners, 72 percent of first-graders, and 30 percent of second-graders counted the icons in the stacks, thus incorrectly reading the new charts.

“These findings underscore the importance of considering children’s limited attentional capacities when designing and introducing learning material,” the authors write. To that end, textbook and lesson plan designers should “not simply rely on intuition as to what features may seem desirable or visually pleasing.” For more on how teachers can help students strengthen their abilities

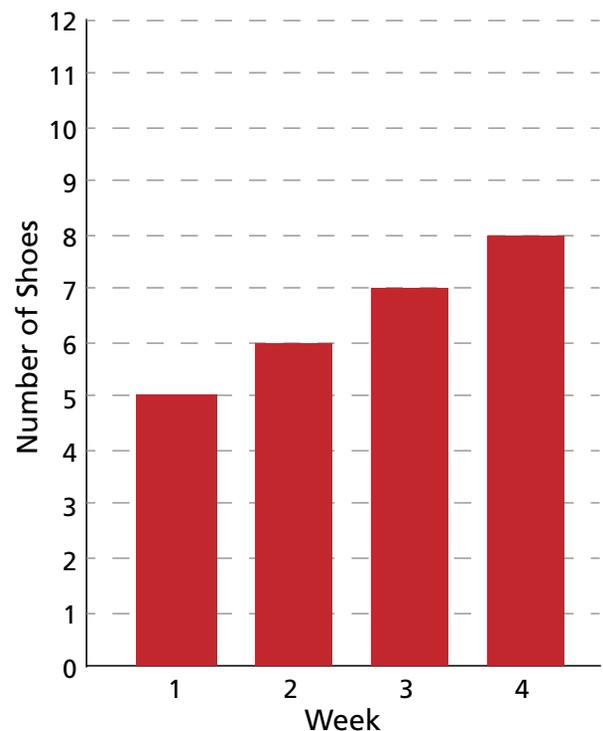
to understand tables, maps, graphs, and diagrams, read “Seeing Relationships” in the Spring 2013 issue of *American Educator*, available at www.aft.org/pdfs/americaneducator/spring2013/Newcombe.pdf.



This chart is less effective.



This chart is more effective.



SOURCE: JENNIFER A. KAMINSKI AND VLADIMIR M. SLOUTSKY, “EXTRANEIOUS PERCEPTUAL INFORMATION INTERFERES WITH CHILDREN’S ACQUISITION OF MATHEMATICAL KNOWLEDGE,” *JOURNAL OF EDUCATIONAL PSYCHOLOGY*, 105, NO. 2 (2013): 351–363.

Concerns Amid Support for Common Core

DO TEACHERS SUPPORT the Common Core State Standards (CCSS) for math and English language arts, which have been adopted by the vast majority of states and the District of Columbia? Have they received the training needed to teach to them? The AFT sought answers to these key questions by asking the professionals who will be working with these standards the most: educators. So in March 2013, 800 K-12 teachers who are also AFT members were surveyed to gauge their support for the new standards and to gather information on how

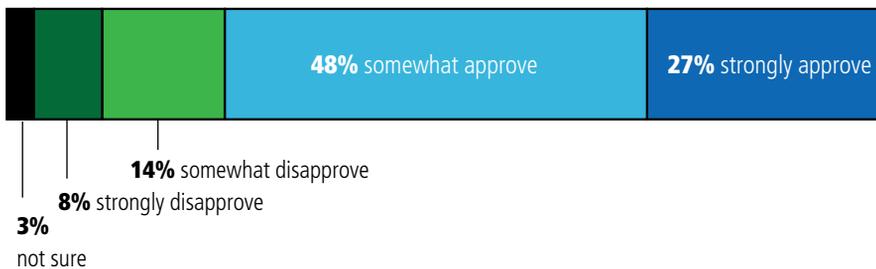
implementation is going.

The results confirm that teachers overwhelmingly support the CCSS as well as a moratorium, like the one AFT President Randi Weingarten has called for, on the consequences for students, teachers, and schools on Common Core-aligned assessments until the standards have been well implemented and field-tested. In the poll, 75 percent of the teachers surveyed approve of the CCSS, and 83 percent support a moratorium on high-stakes consequences until the CCSS and related assessments have

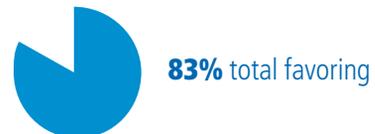
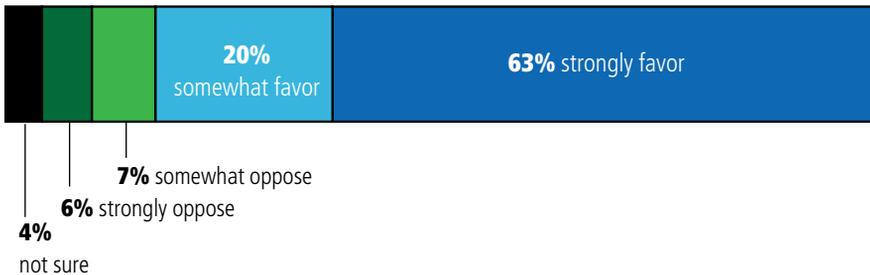
been in use for one year.

While 78 percent of the teachers surveyed said they have received professional development training related to the CCSS, less than half said that training adequately prepared them to teach to the new standards. Meanwhile, 74 percent said they worry that new Common Core-aligned assessments will begin before everyone understands the new standards and before instruction has been fully aligned with them. See the charts below for some highlights of the survey results.

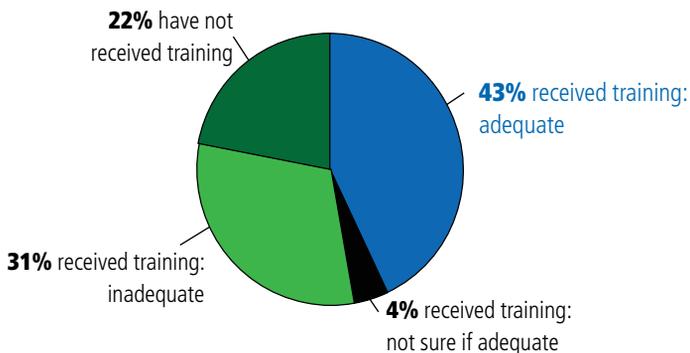
Based on what you know about the Common Core State Standards and the expectations they set for children, do you approve or disapprove of your state's decision to adopt them?



Do you favor or oppose the establishment of a moratorium on high-stakes consequences for students, teachers, and schools until the Common Core standards and related assessments are fully in use for one year?



Have you received any professional development or training related to the CCSS? Was that training adequate in preparing you to teach to the standards?



How worried are you that the new assessments will begin—and students, teachers, and schools will be held accountable for the results—before everyone involved understands the new standards, and before instructional practice has been fully aligned with the standards?

