

The Research Behind Compare & Contrast

The research behind comparison in the classroom is eye opening, with multiple meta-studies (Dean, Hubbell, Pitler, & Stone, 2012; Marzano, 2007; Marzano et al., 2001) showing that the strategy leads to significant gains in student achievement. Yet many teachers have used comparison in the classroom and not seen the results the research promises. What gives?

To find out, we worked with teachers and students to identify the most common reasons comparisons fail in the classroom. In this section, we describe these pitfalls and explain how the Compare & Contrast strategy enables teachers to sidestep them.

Pitfall 1: Teachers use comparisons *after* learning, as either test items or end-of-chapter questions. This emphasis on evaluation reinforces students' sense that comparison is about finding the right answer rather than about discovery and analysis. Because it is a learning strategy, not an assessment strategy, Compare & Contrast requires teachers to provide a clear purpose for the lesson. For example, "People often confuse *meiosis* and *mitosis*. Let's compare them to make sure we're clear about what they have in common and how they differ."

Pitfall 2: Students rush into the comparison before they know the characteristics of what they are comparing. To avoid this pitfall, Compare & Contrast begins with a description phase in which students use rich information sources to identify essential attributes of the items before comparing them. For example, "Use the two readings to help you develop a clear description of renewable and nonrenewable energy."

Pitfall 3: Students don't know what to look for. Any two objects can be compared in multiple ways. Which aspects are important? How will students know when they are done? Compare & Contrast requires teachers to provide clear criteria that keep students focused on the relevant information. For example, "As you describe FDR and Winston Churchill, focus on what made each leader unique, the challenges each faced, and what each accomplished."

Pitfall 4: Students don't have an efficient way to visualize similarities and differences. The most common comparison organizer, the Venn Diagram, leaves too little space to write in the middle, and the presence of the similarities in the middle prevents students from lining up parallel differences. Compare & Contrast uses a Top Hat Organizer (see Figure 2.1) that gives students sufficient space to record similarities and enables them to record parallel differences directly across from each other.

FIGURE 2.1**Student's Top Hat Organizer for the U.S. Congress**

House of Representatives	Senate
Serve for two years	Serve for six years
435 representatives	100 senators
Number of representatives depends on each state's population	Each state has two senators
Led by the Speaker of the House	Led by the Vice President of the United States
Similarities	
The House and Senate make up the legislative branch of government.	
Both propose and debate legislation.	

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Pitfall 5: Teachers treat the identification of similarities and differences as the end of the comparison process. Instead of comparing and contrasting two items and leaving it at that, Compare & Contrast uses higher-order questions to help students draw conclusions and extend their thinking about the significance of key similarities and differences. For example,

- Are reptiles and amphibians more alike or more different? Defend your position.
- What do you think is the most important difference between the two speeches we read?
- Based on your comparison of expressions and equations, what conclusions can you draw?
- A significant difference between an autobiography and a biography is the author. What effect does this difference have on the reader?

Pitfall 6: Students don't apply or transfer their learning. To sidestep this pitfall, Compare & Contrast includes a synthesis task that challenges students to put their learning to use in a meaningful way. For example, "Now that you've compared problems that ask you to solve for rate with problems that ask you to solve for time, I want you to create and solve two new problems. One should require you to solve for rate, and one should require you to solve for time. Then create a third problem that requires you to solve for distance."