

# DQ3: Helping Students Practice and Deepen New Knowledge

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## Element 18

### *Strategies for Examining Errors in Reasoning*

#### **Identifying Errors of Faulty Logic**

Marzano and Brown (2009) defined the following errors that students can find and analyze in faulty logic:

- *Contradiction* - presenting conflicting information.
- *Accident* - failing to recognize that an argument is based on an exception to a rule.
- *False cause* - confusing a temporal (time) order of events with causality or oversimplifying the reasons behind some event or occurrence.
- *Begging the question* - making a claim and then arguing for the claim by using statements that are simply the equivalent of the original claim.
- *Evading the issue* - changing the topic to avoid addressing the issue.
- *Arguing from ignorance* - arguing that a claim is justified simply because its opposite has not been proven true.
- *Composition/Division* - asserting something about a whole that is true only of its parts is composition; on the flip side, division is asserting about all of the parts something that is generally, but not always, true of the whole.

#### **Identifying Errors of Attack**

Students can find and analyze errors of attack. Marzano and Brown (2009) errors in the following ways:

- *Poisoning the well* - being so completely committed to a position that you explain away absolutely everything that is offered in opposition to your position.
- *Arguing against the person* - rejecting a claim using derogatory facts (real or alleged) about the person who is making the claim.
- *Appealing to force* - using threats to establish the validity of a claim.

#### **Identifying Errors of Weak Reference**

Students can find and analyze errors of weak reference. Marzano and Brown (2009) defined these errors in the following ways:

- *Sources that reflect biases* - consistently accepting information that supports what we already believe to be true or consistently rejecting information that goes against what we believe to be true.
- *Sources that lack credibility* - using a source that is not reputable for a given topic.
- *Appealing to authority* - invoking authority as the last word on an issue.
- *Appealing to the people* - attempting to justify a claim based on its popularity.
- *Appealing to emotion* - using a “sob story” as proof for a claim.

### **Identifying Errors of Misinformation**

Students can find and analyze errors of misinformation. Marzano and Brown (2009) defined these errors in the following ways:

- *Confusing the facts* - using information that seems to be factual but that has been changed in such a way that it is no longer accurate.
- *Misapplying a concept or generalization* - or wrongly applying a concept or generalization to support a claim.

### **Practicing Identifying Errors in Logic**

The teacher can provide practice exercises to help students identify errors in logic. The teacher can create their own exercises or can use those found in *Teaching and Assessing 21st Century Skills* (Marzano & Heflebower, 2012).

### **Finding Errors in the Media**

The teacher use various media sources such as footage of political debates, televised interviews, commercials, advertisements, newspaper articles, and blogs to have them to find, identify and analyze errors in reasoning that underlie the messages therein.