I Can Use the Identify and Interpret (I^2) Strategy

Teacher

Students can become overwhelmed when they try to interpret graphs, figures, or data tables. The Identify and Interpret (I^2) strategy is a way to help students make sense of the information by breaking it down into smaller parts.

In the I^2 strategy, students first *identify* changes, trends, or differences. They draw an arrow to each observation and then write a "What I see" (WIS) comment. These comments should simply be what the student observes, such as a positive slope on a graph or increasing numbers in a data table. After students have made all their observations and written their WIS comments, they should *interpret* the meaning of their observations by writing a "What it means" (WIM) comment for each. Once students have mastered WIS and WIM comments, ask them to create a caption for the graph, figure, or table. A caption is a summary of all the information and helps show students' understanding.

To use the I^2 strategy, you should have students place the graph, figure, or table that they are interpreting into their science notebooks. They should then draw the arrows and write their comments on and around the image. This helps them make the connections between the graphical information and their ideas. They should write the caption on the same page to help remind them of the interpretation.

Help students with page management as you use the strategy. Remind them to leave plenty of room around the graph, figure, or table so they can write their WIS and WIM comments. Also make sure they have room below the graph or figure to write their captions.

When you first begin using this strategy, model it for students. They can benefit greatly from watching you do a "think-aloud" as you complete the strategy on a graph, figure, or table. In the beginning, only ask students to complete the WIS and WIM comments without writing a caption. They will likely need help understanding what they should be looking for on the graph. Some students do not add enough arrows and WIS comments to interpret all the information. Other students try to add as many arrows and WIS comments as possible. These students soon find that they cannot interpret the meaning of some of their WIS comments. For example, if they identify that a graph is printed in black ink, they will discover that they cannot assign meaning to this WIS comment. This stage helps students begin to filter their numerous observations and only identify those that are significant to the graph, figure, or table.

Once students have become proficient at writing WIS and WIM comments, ask them to add a caption. Some students will find it repetitive since they are joining the WIS and WIM comments to create most of their captions; however, help them realize that the ability to create a coherent paragraph that interprets all parts of a graph, figure, or table is an important skill in science and other subjects. Later, when students have had a great deal of practice with this strategy, the ultimate goal should be for them to write a caption without having to list their WIS and WIM comments. Eventually, these comments become a habit of mind, and students should be able to notice all the pieces of a graph or figure to come up with a complete interpretation. Developing these habits of mind to identify and interpret data in many forms is a skill that will benefit students in all subjects, in their jobs as they get older, and in becoming a scientifically literate citizen.

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