Does Color-Coding Improve Our Memory's Performance?

Lesson plan for performing and discussing an experiment

Suggested length: 3 class periods (45-55 minutes each)

Lesson components:

- Opener (10 minutes)
- Activity
  - Part A: Students perform an experiment to test the influence of color-coding in memory performance (focus of 1 class period)
    Part B: Discussing the experiment's results in class (focus of 1 class period)
- Optional closer (10 minutes)

Assessment

Students will be assessed on their development of a Kialo discussion about the results of their experiments. (see suggested rubric for ages 11-13 and for ages 14+)

Opener (10 minutes)

1. Run a memory experiment with your students using the 15 Words Presentation.

2. Ask students who remembered the word "orange" and make a note of how many were able to. Then, ask them who could remember the word "tree" and compare both results with students.

Activity

Part A: Students perform an experiment to test the influence of color-coding in memory performance (focus of 1 class period)

1. Divide students into groups of 4-5.

2. Distribute student instructions and go over Part A with the class.

   TIP: Tell students to not use their classmates as their participants to avoid bias.

3. Provide each group with a copy of the experimental design graphic organizer and the data recording sheet to help students plan and document their experiment.

Part B: Discussing the experiment's results in class (focus of 1 class period)

1. Encourage each group to share their results with the rest of the class. *What were the averages for each group? Did they encounter any problems performing their experiment?*

2. Remind students that before reaching a conclusion about the hypothesis, the results and methodology should be thoroughly discussed.

3. Ask groups to discuss the following questions and then share with the rest of the class:
    a. *Is the difference between the control and the experimental group's averages large enough that you think color-coding has an effect on memory?*

    b. *What other factors could account for differences between the control group and the experimental groups?*

    c. *Was your sample big and diverse enough for your conclusion to stand?*

> **TIP:** Encourage students to refer back to their experimental design graphic organizer to answer these questions.

4. Display the example Kialo discussion for the students to see . Explain that Kialo discussions have a main thesis and a list of pros and cons (and that each pro and con can have their own pros and cons).

5. Explain that each group will have their own copy of an undeveloped Kialo discussion and that they will use it to reflect on the experiment and the group's ability to generalize their conclusions.

6. Go over Part B of the student instructions.

7. Invite each group to their own clone of the undeveloped Kialo discussion.

Optional closer (10 minutes)

1. Explain to students that scientists have found that color-coding *does* have an influence on our memory's performance. Get students to reflect on why they think that this happens.

> **Hint:** As the link article suggests, it is due to color increasing our attentional level and arousal.