

## Exercise 9.4

### CREATING CONTEXT

### Scientific Problem Solving

Godden and Baddeley (1975) concluded that information was better remembered when it was recalled in the same context in which it was learned. You may remember the experiment. They had a group of people listen to a list of words. Half the group listened to the words while sitting on the beach, and the other half listened to the words while they were underwater. When later asked to remember the words in the list, the participants remembered more words correctly when they were in the same setting in which they heard the list. If a person originally heard the list while underwater, that person would remember more of the list if asked while underwater than if asked while sitting on the beach.

This finding has interesting implications for education. For example, a psychology professor interested in improving student performance on tests might choose to conduct her own experiment on the effects of context on recall. The basic hypothesis is that taking a test in a context similar to the learning context will improve performance. What are the specific variables and how might she conduct this experiment in "real life"?

Independent variable: \_\_\_\_\_

Dependent variable: \_\_\_\_\_

Extraneous variables for which she should control: \_\_\_\_\_

Outline of a basic experimental protocol: \_\_\_\_\_

*After completing this exercise, you should be able to*

- recount the original findings of the Godden and Baddeley experiment.
  - construct an experimental strategy to test a hypothesis.
  - describe variables that need to be controlled to eliminate alternative hypotheses.
  - speculate about how context-based learning could influence study habits.
-

## Exercise 9.4

### CREATING CONTEXT

### Scientific Problem Solving

*Independent variable:* The context in which the learning and recall occur. In this exemplar it would be the classroom and school cafeteria.

*Dependent variable:* Student performance. This could be measured in a variety of ways, but test score or number of correct answers are used here.

*Extraneous variables for which she should control:* Any variable other than the context that might affect student performance should be considered. A short list might include the type of material the instructor is teaching, the mode in which the material is presented (lecture, reading, lab), the time of day, and the type of test. A more complete list could also include things like the gender of the students, their majors, how they take notes, how many days they were present, and how many other classes they are taking this semester.

*Outline of a basic experimental protocol:* One idea would be to take a class and have half the students take the test in the classroom where the course is normally taught, and have the other half take the test at the same time in the cafeteria. The instructor could then compare the scores of the students who took the test in the classroom (same context) with those who took the test in the cafeteria (different context). Although this would give her the comparison she wants, it also leaves her with several questions. The most serious of these questions is: What if students don't do well in the cafeteria, simply because it is the cafeteria and it is noisy, big, has tables instead of desks, and lots of interruptions?

A more sophisticated design would use two classes of students, one that she teaches in the classroom and one that she teaches in the cafeteria. The instructor would be careful to teach the same material over the same time period to both classes and to control the extraneous variables listed above to the best of her ability. She could then divide each class in half and have half of each class take the test in the cafeteria, and half take the test in the classroom. With this design, she has more information. Half of the students taking the test in the classroom learned in the classroom, and the other half learned in the cafeteria. At the same time, half of the students who took the test in the cafeteria learned in the cafeteria and half learned in the classroom. In this way she can determine if something unique about the setting causes any differences she finds. If all students who take the test in the cafeteria score lower than those who take the test in the classroom, for example, then she knows it is not taking a test in a different context that is the issue (because half of the students taking the test in the cafeteria are testing in the same