Editorial

The Interrupted Case Method

By Clyde Freeman Herreid

There are many ways to tell a tale. This issue of the journal demonstrates that point as it devotes itself once again entirely to case studies.

The classical method of teaching cases is the discussion method used by Harvard law professors for over 100 years. We have come a long way since then. Far and away the most popular tactic for many faculty when teaching a case is the method of *progressive disclosure*, where the story is provided piecemeal to students, who must act as detectives to solve the mystery. This is the approach used in Problem-Based Learning (PBL) pioneered by the medical school at McMaster University. Students are given a "patient problem" and over several days are required to diagnose it as they seek information outside of class.

Here, I wish to describe a method related to PBL that I have been using for many years in classrooms and faculty development workshops. I call it the *Interrupted Case Method*. Like the classical method of PBL, information is fed piecemeal to students working in small groups, and the Interrupted Method shares with PBL the great virtue of engaging all students in problem solving. But unlike PBL, in the Interrupted Method the case is presented in one class period rather than over several days. And (here is the real beauty of the method) science faculty find they can easily write and teach cases of this type!

A little background: The *New England Journal of Medicine* used to publish a Clinical Problem column where data about a real patient were presented in stages to an expert clinician who responded to the information, sharing his or her reasoning with the reader. This exercise was done in a series of steps: first, the case writer provided a paragraph or two of information about the patient. The clinician then revealed his thinking about the case, speculating on possible diagnoses and perhaps suggesting a test that might be performed. Next, the case writer gave some more information about the patient. Again, the clinician responded. Several more rounds of case writer and clinician remarks followed, usually ending with the case author providing a summary analysis.

This method of case analysis, where a problem-poser's remarks alternate with a problem-solver's remarks, can be used in the classroom in several effective ways. The most obvious but least inspired method is to use the lecture method. The teacher must develop a problem and then write the appropriate script—a dialogue between the problem-poser and the problem-solver (expert or novice). In the classroom, the instructor might present the case using the "two hat" technique—first acting as the problem-poser, and then switching hats and acting as the problem-solver. Alternatively, students could take turns reading the parts in the dialogue. This method of case presentation is largely passive, yet it does illustrate how an expert (or novice) reasons his or her way through a problem. It has the same weaknesses of any passive form of presentation unless the instructor stops periodically and has a discussion with the students.

A more exciting way to use the idea is to actively involve all of the students in a problem-solving exercise using the Interrupted Case Method. Perhaps the easiest way to use the method is to select an article from a scientific journal. The instructor chooses a question drawn from the introduction section of the paper. Small groups of students are asked to design an experiment to solve the problem that the article raises. After a suitable time for discussion, groups are called upon to present their experimental design and explain the reasons for their approach. Commentary is then solicited from other class members on the appropriateness of the approach.

In the next stage the instructor briefly describes how the authors of the paper decided to attack the problem. Their actual methods are described. Then the groups are asked to predict what the results might look like. Perhaps a blank table or blank graph is given to the groups to fill in. Once again, groups are asked to report their solutions to the entire class with their reasoning made clear to all. Commentary from students and teacher follows.

At this point the instructor reveals the actual data published in the article. The groups are asked to interpret the results and draw conclusions in light of the original hypothesis. After a suitable discussion, the instructor reveals the author's actual interpretation of the results and their conclusions. Closure follows.

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You will see the potential for the method by looking at the case in this issue called "Mom Always Liked You Best." In fact, you will see several versions of this method in the following pages. Indeed, this method of presentation is arguably the favorite case approach for most science teachers; it mimics how we all have to make decisions based upon incomplete data and must constantly revise our conclusions as more information becomes available. Read on and enjoy!

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