

Trigger Cases Versus Capstone Cases

By Clyde Freeman Herreid

Baa boom! Ra ta tat tah. Razz a ma tazz! Nightclub acts often start with a big number to immediately catch the attention of the audience. Performers say that you only have 10 seconds to do the job. First impressions are important—according to psychologists, we assess people within the first few seconds of introduction. Another startling statistic is that the evaluations of students seeing only a few seconds of a teacher instructing a class are remarkably similar to the evaluations of students who have sat through an entire semester of a course. Did I say that first impressions are important?

Big finishes are important, too. Every big show wants to finish with the crowd standing and cheering and everybody satisfied. It is a summation of the show's main themes in a giant, flashy finish. You don't need a spectacle to have a good, solid finish, but you should have four important elements, according to movie screenwriter Terry Rossio:

1. Decisiveness.

The most satisfying endings resolve the issues at hand clearly and decisively, one way or the other. Effective endings that are ambiguous are rare—and a bit of a contradiction in terms.

2. Setup.

The ending can't come completely out of left field. It should be one of several known possibilities, or referenced as a possible solution sometime earlier in the film. The ending must appear to evolve naturally out of the elements that are known. You don't

want to change the rules at the end of the game—that's not fair.

3. Inevitability.

Another word for this might be “appropriateness.” You want an ending that is so “right,” it seems as if it could have turned out no other way—but only after it's happened! Because it's also got to have...

4. Unexpectedness.

This is the real trick. The unexpectedness of the ending is the true payoff, the reward for watching the film. It's the element the audience will weigh most heavily when judging the outcome of the story—whether or not it was worth waiting.

So, have I established the fact that beginnings and endings are important in show business? I hope so. I am now going to argue that they are also important in teaching in all sorts of ways, including the way we start and finish a course or a class. Little attention is paid to this by educators. Then again, we educators aren't in the entertainment business. Or are we and we just don't know it?

What does all of this have to do with case study teaching? Suppose you have a case study that fits perfectly in your course. You want to use it but wonder where in the semester it should go. Should you use this gem to start a topic or to wind it up? In other words, do you use the case to prompt interest in the topic (as a trigger case) or as a summary (capstone case)?

Why use cases?

During case study workshops, I often

ask faculty to list as many reasons that they can think of why someone might use case studies. Moments later I will ask them to list why people might not want to use case studies. The following are examples of faculty responses.

1. “Different techniques work for different students.”
2. “Students become active partners in the learning process, not passive vessels.”
3. “Students take charge of their own learning. They become ‘independent learners.’”
4. “Students learn from each other.”
5. “Students develop critical-thinking skills as they analyze the case and have to make a decision.”
6. “Students deal with practical, real-life problems.”
7. “More learning occurs because the interpersonal dynamics of the classroom give heightened drama to the material.”
8. “Students like it better. They become more motivated. It's fun!”
9. “Students engage emotionally. [Cases] gives the material a human touch.”
10. “[Cases] appeal to nontraditional students in the sciences.”
11. “Student learning is internalized as they learn to grapple with messy problems.”
12. “Students develop skills of oral communication and presentation: speaking, debating, and resolving issues.”
13. “Students develop a sense of confidence in themselves and relating to their peers. It is a rehearsal for life.”

14. “Students learn how to face multidimensional issues and multiple viewpoints and formulate action plans.”
15. “Because wisdom can’t be told. Students learn by doing.”

Why not to use cases

1. “Cases aren’t the best way to convey information and truth.”
2. “My subject does not have room for discussion. Facts are facts. That’s all I teach. Other fields may find it useful.”
3. “Discussion, argumentation, and opinions cannot occur until students know something. That only happens after years of study.”
4. “You are wasting time with student discussion.”
5. “You are letting the lunatics run the asylum.”
6. “You are giving up control of the classroom.”
7. “Not enough realism can be put into the classroom this way.”
8. “I don’t have time to do it.”
9. “A case is a snapshot rather than real life, where problems are a continuum. We can’t really wrap problems up.”
10. “Cases require lots of instructor time. Too much for me.”
11. “Evaluation of students is subjective and difficult.”
12. “A mediocre teacher will do worse with a case than with a lecture.”
13. “It’s hard to keep cases current and case preparation is hard and time consuming.”
14. “Wisdom can be told! I learned by lecture and so should they.”

Observations

I want to make several observations about the lists. In the first list, you will notice that there is little emphasis on facts, whereas in the second the reverse is true. In short, people who use cases appear to like them because they emphasize higher-

order knowledge skills found near the top of Bloom’s taxonomy. People who shy away from cases seem more focused on the lower levels of Bloom’s taxonomy: facts. Coverage of material appears of vital concern. Not surprisingly, assessment studies confirm this bias. Students taught with cases via the problem-based learning method do not show a better grasp of the facts than do students taught with lectures, but they do demonstrate greater higher-order knowledge skills.

To return to our question: Is it better to use a case at the beginning of a topic or at the end? To answer this, we need to examine both trigger and capstone cases in terms of their goals.

Trigger cases have the primary goal to stimulate interest in the subject rather than to convey solid factual information. It is not that they necessarily lack data, but they are used as an entry point into the subject. Let me give you an example. Not too long ago in the pages of this journal, a student and I published a case about the human papillomavirus (HPV), which reportedly can cause cancer of the uterine cervix (Zavrel and Herreid 2008). The case we wrote told of the dilemma facing the state of Texas in 2007 when Governor Perry proposed to impose mandatory vaccinations against HPV for schoolgirls. The case narrative outlined the major arguments for and against such a mandate. Before publication, the case reviewers commented that there was little science within the case. And indeed, they were correct. But the primary purpose of the case was not to teach students about cancer, immunology, the cell cycle, mitosis, or microbiology. All of those topics were touched upon. The primary purpose was, instead, to introduce students to the issue and to raise their awareness

about how a public policy question played out in the public arena. It raised ethical and economic issues as well as medical and biological ones. But even in those areas the case material was thin, for the case was not written to examine the depths of those topics, either. It was simply a trigger case to start the conversation on any and all of these issues. (If we wanted to, we could add information *ad libitum*, and perhaps teachers of many disciplines would provide their own addenda. In fact, we authors added a section to the teaching notes emphasizing some of the scientific issues so that teachers wishing to add the information as a prelude to the case could do so.)

Cases do not stand alone. They fit in the context of a course and a curriculum, and within students’ background knowledge. Students bring a social construct to the table. Cases are not taught in a vacuum. So trigger cases are merely the first step in learning more about a topic, such as HPV in a public policy dispute. And what teachers choose to do with the topic is up to them. The case galvanizes interest in the topic, but the rest is up to the teacher. For instance, a microbiologist might use the case to introduce the subject of viruses and their potential role in inducing cancer. A cell biologist might use the case to stress the cell cycle and the controlling agents for mitosis. An ethicist might use the case to discuss who should have the right to decide if vaccination should be voluntary or controlled by the state, whereas an economist might focus on the cost of such an enterprise. And so on.

A capstone case has a different function altogether. Its purpose is to bring diverse threads of information together and to put things into a broader context. It increases students’ familiarity with

the terminology and reinforces the concepts. So, suppose we are using the HPV case in a microbiology class as a capstone for the section of the course dealing with viruses. Presumably, when students now see the case, they have already learned about viral reproduction and perhaps about how some viruses can promote cancer. Possibly they also have learned about the effectiveness and problems of many vaccinations. If they receive the HPV case now, they see how small the role of science really is in many real-world problems. Yes, they will undoubtedly discuss the science questions with more skill, but political con-

siderations often trump the science when decisions are to be made. This is a useful lesson.

If we return to the question of whether to use a case at the beginning or end of a topic, the answer is not so inscrutable. It clearly depends upon your goal. Both trigger and capstone cases have their place, but I would contend that if you wish to really engage a student in a subject, one can hardly do better than to start with an interesting, current, and controversial topic. And even if you sneak in a bunch of scientific lingo that initially doesn't make sense, a trigger case can surely prompt a student to want to learn more about

the topic. And that is one heck of a great way to begin a day.

Reference

Zavrel, E., and C.F. Herreid. 2008. Sex and vaccination. *Journal of College Science Teaching* 37 (5): 74–76.

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