

Using Case Studies – So Many Options!

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Case Study – What is it?

“A **case study** involves an up-close, in-depth, and detailed examination of a particular case or cases, within a real-world context.” (Bromley, 1986) The categories of case studies used in a classroom are diverse and include: analysis, dilemma/decision, directed, interrupted, clicker (or polling), flipped, laboratory, problem-based learning, discussion, debate, public hearing, trial, role playing, and jig-saw. Detailed description of these different categories may be found [here](#). A case study may be used within one class period or span over several class periods.

Case Studies – Why use them?

What do students gain?

- Opportunity to apply their understanding to real-world problems;
- Practice resolving ethical issues;
- Listen to, and incorporate diverse perspectives to achieve a common goal;
- Learning through narrative when taking a story-telling approach;
- Students practice team-work, inquiry, data interpretation, and contextualizing one example into a bigger picture;
- Feelings of cohesion and shared accomplishment

What do instructors gain?

- A chance to offer stimulating and dynamic class sessions beyond “just” lecturing;
- Instructor serves as a facilitator to guide students through case;
- Opportunity for creativity (if developing own case studies)
- An opportunity to regroup (if using cases studies already developed by others – see below)

- Formative assessment of students' capabilities in ways that don't present to students as a "test" or "quiz" (but solving a real world problem is a strong form of assessment).

Case Studies – When to use them?

- Use them **any time you want!**
- **Second day of class:** after syllabus day, a case study during the first lesson sets the tone for class expectations moving forward: coming to class prepared, group work, asking and answering questions, taking supported risks in the classroom (there may be multiple right answers), using software to answer questions, etc.
- **In Recitation:** Students enjoy using recitations to do practice problems that relate to lecture. A case study is a connected set of problems, that, if selected carefully can reinforce content and skills practiced in larger lectures.
- **As exam review:** We often tell students "the best way to study is to apply your knowledge" but some don't know how to accomplish this on their own. Using a case study as an exam review, and then ending the session having students identify all of the skills and knowledge they had to call upon to complete the assignment will help them identify gaps in their knowledge.
- **To break up the monotony:** falling into a predictable routine can stifle enthusiasm and engagement. Try using case studies periodically to keep class periods variable. Give students warning they're coming or don't (and surprise them). Keep the activities low stakes so that a missed class doesn't disadvantage those who cannot attend.
- **Use them for asynchronous sessions:** The Sakai lesson tool (along with subpages) allows for case studies to be delivered asynchronously. The interrupted format (where information is revealed in pieces) is particularly fruitful for asynchronous delivery because Sakai allows components to be hidden until students complete and submit required elements. The capacity to embed videos within Sakai subpages allows instructors to either record themselves guiding the case study or interject relevant video clips to keep students engaged.

Case studies – Where do you find them?

- There are two ways to access case studies:
 - o (1) use case studies that have been developed by other instructors or
 - o (2) write your own!

Here are some websites where, if you teach STEM classes, you may find case studies that are relevant to your classes:

- [National Center for Case Study Teaching in the Sciences](#).
- [HHMI BioInteractive](#) (for biology, biochemistry, and environmental science material)
- [QUBES](#) (for quantitative biology purposes)
- [DataNuggets](#) (brings data sets into the classroom)
- Journals also publish case studies: such as JUNE (neuroscience), ABT, JCST, CBE-Life Science, etc.

If you are interested in writing your own case studies please consider attending the following workshop:

Share your pedagogy – you can publish your Case Studies!

A workshop will be hosted on **May 17, from 11:30-12:30** by the Biology Department, geared towards folks teaching in STEM who want to write and publish case studies.

If you're interested in attending a workshop, please visit this link to RSVP and a Zoom link will be sent to you: <https://forms.gle/jfTk8yimzaaaawX88>

Sources:

Bromley, D.B. (1986) The Case-Study Method in Psychology and Related Disciplines. (Chichester, England: Wiley)|ISBN-13=978-0471908531