

# Case-Based Learning

## General

Case-based learning (also: *guided inquiry approach*<sup>1)</sup>) is a **constructivist** instructional design method employed in law schools even as far back as 19th century and suggests learning through **introducing** a learner to a situation he might face in real world, **discussing** it and making **conclusions** out of it.

## What is case-based learning?

Case based learning introduces learners who typically work in groups to a **hypothetical situation (case)** they are likely to face in real life. They are then encouraged to **examine and discuss** it. This approach is learner-centered and the teacher's role is to guide the discussion to address the right aspects of the problem and thereby facilitate learning. This approach is often used for developing of decision making skills and therefore often referred to as *case-based reasoning*.

Case-based studies can be used in every classroom and present a way of connecting theory with practice. They enable learners to see different consequences of their decision as well as different points of view offered by others.

Simple rules that should be followed when writing a case for students are that the story (case) should be<sup>2)</sup>:

- focused on an **interesting issue**,
- set in the past five years,
- provoking **empathy with the central characters** and including quotations,
- **relevant** to the reader and have a pedagogic utility,
- **conflict provoking** and decision forcing,
- short and **enable generalizations**.

The suggestions on leading a case are:

- Prior to the case give students materials or articles relevant to the case.
- Divide students into small groups (3-6).
- Present a carefully designed case which requires participants to reach a concrete outcome like judgement or decision.
- Facilitate, structure and guide further discussion in groups using carefully designed (written) questions requiring elaborate answers.
- Leave the questions concerning concrete decision for the end of the discussion.
- If possible, support reaching a consensus in group decision or observation, but also allow groups to work without interference.
- Compare results of different groups and help them understand their implications.

It is important to notice that cases do not necessarily have just one correct conclusion. Based on their format, cases can be **finished cases** (based on facts used for analysis or suggestion of alternative solutions), **unfinished open-ended cases** (where the outcome has to be decided) and fictional or

real.

## What is the practical meaning of case-based learning?

What follows is an example of a case-based learning session borrowed from work of Srinivasan et al.<sup>3)</sup>

Instructional element	Case-based learning activity
Presenting problem	A 15-year-old boy with asthma comes with his father to a clinic visit. The father wants his son tested for drugs because his behavior has changed over the past several months. The father wants a perfect son (like his older son) and doesn't understand why his son is withdrawn and doing poorly in school. The son is initially sullen, resentful, with poor eye contact. The father is angry and feels that he has been treated poorly because he has HMO insurance.
Actual dilemma	The actual dilemma is to establish trust with the son. Specifically, to understand reasons for the son's behavioral change and to ensure that the son returns for future visits. During the encounter, learners must convince the father to leave the room, to have an open conversation with the son. The son is quite upset that he can't participate in sports, because he gets short of breath from uncontrolled asthma. His friends have changed because of this, and he feels isolated at school. Once the learner discusses confidentiality, the son reveals that he has tried drugs in the past, but he is not a frequent user. His father is domineering and judgmental. The son doesn't want his father told about his sporadic drug use. "This is just between us, right?"
Time for session	Three hours per session. The SPs arrive about 30 minutes into the session.
Faculty training	50 minutes before each session, plus faculty guide given a week before the session.
Student pre-session preparation	Each student reads one or two core articles about the topic. Three to five students read specialized articles on related topics, which they will present to the group at the appropriate time.
Initial question to begin discussion	"Why is the patient here?"
Student approach	May interrupt, pose questions, provide answers/approaches to dilemmas that occur during the session. Responds to faculty questions and directions.
Faculty approach to students' incorrect knowledge or assumptions	The faculty may: Redirect and explore incorrect statements: "Why do you think that is true? Can you provide some examples? What do the rest of you think?" Provide corrective information: "Actually, another approach to managing asthma in adolescents involves..." or "When you ask the SP sensitive questions, you must give him time to respond. Don't interrupt." Discuss alternate techniques: "Why do you think the patient isn't comfortable talking to you about sensitive issues? What could you do differently?"
Faculty approach to "clinical blind-alley" digression	Probe learner for alternatives: "Why do you think that is important in this case? What else might you consider that might be important? What do the rest of you think?"
Student use of additional resources during the session	None.

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Student additional work after the session	None required. Articles read by selected students pre-session are available to all students after the session. If the group chooses, unanswered or unresolved issues are investigated and brought back to the group later.
Case continuity	The same case may continue over several sessions, but will be spread out in time. For instance, on case 4/session 1, a standardized patient will present with newly diagnosed breast cancer and the student will have to break the bad news. On case 4/session 2 a few months later, the student will have to discuss informed consent around clinical trials. On case 4/session 3, the learner will have to discuss code status and inform the patient that the disease has recurred. On case 1/session 4, the learner will have to deal with an angry partner after the hospital has failed to respect the patient's wishes to not be intubated, as listed in the durable power of attorney.

A number of example cases in all areas of science can be found on the web site of [National center for case study teaching in science](#).

## Criticisms

As case-based learning is a more guided approach to learning in which field experts can provide students with correct answers when needed or correct incorrect students' assumptions, proponents of pure discovery learning methods argue that this might cause experts to lecture instead of facilitate learning and that providing answers kills curiosity<sup>4)</sup>.

The proponents of guided instruction on the other hand argue case-based learning still does not exploit successful methods of teaching like worked examples and doubt that time spent during self-preparation and class discussion does result in more successful learning than if the same time was spent teaching using guided instruction aligned with current knowledge of human cognitive structure.

## Keywords

- **Case-based learning, CBL, guided-inquiry approach**

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2)

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3)

Example borrowed from: Srinivasan, Malathi, Michael Wilkes, Frazier Stevenson, Thuan Nguyen, and Stuart Slavin. Comparing problem-based learning with case-based learning: effects of a major curricular shift at two institutions. Academic Medicine: Journal of the Association of American Medical Colleges 82, no. 1: 74-82. January 2007. For comparison see: Problem-based learning.

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