THE CASE METHOD AND PROBLEM-BASED LEARNING

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Be inspired. Be inspiring.
Tips for Participating in Adobe Connect

Technical tips

Audio:
• Your computer speakers (or headphones) provide the audio. | Closing other programs can improve your audio. | We recommend using an updated version of Flash.

Full Screen Option:
• During the presentation, the “Full Screen” button at the upper right will allow you to switch back and forth between full screen and normal view.

Troubleshooting:
• Closing browser and rejoining event often corrects technical issues.

Participation tips

Use the Chat window to:
• Introduce yourself;
• Share questions or comments; or
• Communicate a technical issue.

Activities:
• We will use polls and additional chats throughout the event for interaction.
• Participation is required when Continuing Education credits are available.

Be inspired. Be inspiring.
Welcome

Linda Nilson
Clemson University
Participant Outcomes

After this workshop, you will be able to:

• Evaluate the appropriateness of using the case method or PBL in your courses.
• Explain to students why you’re using it.
• Find/select or write good cases/problems.
• Use and debrief cases in different ways.
• Guide students through the PBL process.
• Assess your students’ solutions.
A Case/PBL Problem = A Realistic Story with a Problem to Solve

- **Case**: Problem solved as an individual, small-group, or whole-class activity using *course materials*

- **PBL**: Problem solved by small groups conducting *outside research* on student-identified “*learning issues*” (unknowns)
Poll #1
Which of these two methods have you used in your teaching?

a. Neither method
b. Case method
c. Problem-based learning (PBL)
d. Both the case method and problem-based learning (PBL)
Poll #2

If you have used either the case method or PBL (or both), what problems have you had using it (them)? Check all that apply.

a. Students dislike learning on their own.
b. Students see it as busy work.
c. Students are bored.
d. Students dislike the uncertainty of the problem-solving process.
e. Students are afraid to offer ideas.
f. None of the above.
Why Use Cases or PBL?

• Engages students *actively*
• *Compensates* for lack of real-life experience
• Teaches *application* of principles *plus*
  – *Analysis* of situations and data
  – *Synthesis* of principles and information/data into possible solutions
  – *Evaluation* of information/data and possible solutions
• Teaches both *deductive* and *inductive* thinking
Why Use Cases Specifically?

• Highly effective across disciplines
  – Helps Mount Holyoke alumni succeed in law school, graduate school, and careers, says research.

• Students enjoy cases once they understand the task.
PBL dates back to the 1970s. The case method has a longer and colorful history...
Why Cases? *(continued)*

Versatile and easy to manage

- In-class activity (writing, speaking), homework, exam
- Individual, group, or whole-class activity
- Discussion, symposium, debate, role play/simulation with mock trial, public hearing, board meeting, etc.
- Various and flexible debriefing formats
- Mini to massive in length
Some Quick Cases in Faculty Development

• You are discussing the history of the AIDS epidemic. During the exchange, one student says, “AIDS is God’s punishment for queers. They deserve it.” Some students laugh at this comment, while others are unusually quiet.
A couple of weeks after the final exam, a student with a poor grade in your course approaches you saying that her performance will seriously worsen her father’s heart condition. Early in the meeting she breaks into tears.
• You assigned your class a reading that portrays a particular ethnic group in a stereotypical light. You want to use the reading for its historical significance, and you previously explained this to the class. Your class includes two students from that particular ethnic group. During the discussion, they do not take part in the discussion and won’t make eye contact with you.
Why Use PBL Specifically?

• Teaches/gives practice in research skills
• Teaches/gives practice in team skills
• Teaches self-direction in learning

Downside:
• Some students dislike self-direction.
• PBL takes more time, so narrows content learned.
Types of Cases and Problems

1. Single story
2. Continuous, unfolding story
3. Sequential-interactive
   - Students start with limited/missing information, rank-order possible solutions, request specific additional info to narrow down options, re-rank-order possible solutions, request more info, etc.
   - *Diagnostic process.*
Teaching the Process of Narrowing Down a Diagnosis

1. List and rank-order all possibilities
2. What info may eliminate Possibility #1?
3. GET INFO
4. Does info eliminate Possibility #1?
   - If yes, DISCARD Possibility #1
   - If no, ASK: Does info confirm Possibility #1?
     - If yes, REPEAT PROCESS for other possibilities.
     - If no, GET INFO
5. If yes, REPEAT PROCESS for other possibilities.
6. If no, ASK: What info may confirm Possibility #1?

GET INFO
Good Cases and Problems

- Tied tightly to course material and outcomes
- Realistic and relevant for today—enhanced by drama/suspense, empathetic character development, technical detail, and dialogue.
- Have general applicability
- Contain relevant and irrelevant information
- Present a dilemma with multiple, uncertain, risky, and/or controversial solutions (“fuzzy” problem)
To Find Good Cases and Problems (you can adjust)

- [http://www.udel.edu/pbl/problems/](http://www.udel.edu/pbl/problems/)
  - Free—physics, biochemistry, biology, chemistry, criminal justice
- [https://primus.nss.udel.edu/Pbl](https://primus.nss.udel.edu/Pbl)
  - Free—almost all disciplines, registration required
• http://ublib.buffalo.edu/libraries/projects/cases/case.html
  – Free—almost 400 in the sciences and engineering; plus links to cases and problems in most disciplines
To Find Good *Ideas* for Cases and Problems

- Data sources/samples
  - Spreadsheets, graphs, charts, clinicals, records (public, medical)
- News, journal, or magazine articles
- Product descriptions or advertisements
For Good Ideas *(continued)*

- Provocative statements by experts/leaders or testimonials/complaints by patients/users
- Excerpts from memos, letters, primary sources, or ethnographies
- Excerpts from laws or public policies
To Write Your Own Good Cases and Problems

• Know your *objectives* (principles to teach) and *time* limit (case or problem, type, how integrated).

• Recall qualities of good cases/problems → situation/story/dilemma and characters.

• Decide info to provide, exclude, and add on.

• Don’t bias story towards one specific solution; favor high complexity, ambiguity.

• Draft debriefing questions.
Poll #3

Have you ever written your own case or PBL problem? If you have, how easy or difficult was it?

a. Very easy
b. Fairly easy
c. Quite challenging
d. Very difficult
Case Debriefing Formats

• (a) Problem  (b) Remedy(ies)  (c)Prevention(s)
• Series of specific questions, to include:
  a. Problem
  b. Relevant principles, concepts, definitions
  c. Relevant knowns
  d. Relevant unknowns (*Students request or recall in case method, research in PBL.*)
  e. Solution options
  f. Criteria for selecting or rank-ordering options
Practice writing debriefing questions for quick cases.

• You are discussing the history of the AIDS epidemic. During the exchange, one student says, “AIDS is God’s punishment for queers. They deserve it.” Some students laugh at this comment, while others are unusually quiet.
Poll #4

- Write two or three debriefing questions for this case. Be guided by the learning objectives you have for this case.
• A couple of weeks after the final exam, a student with a poor grade in your course approaches you saying that her performance will seriously worsen her father’s heart condition. Early in the meeting she breaks into tears.
Poll #5

• Write two or three debriefing questions for this case. Be guided by the learning objectives you have for this case.
• You assigned your class a reading that portrays a particular ethnic group in a stereotypical light. You want to use the reading for its historical significance, and you previously explained this to the class. Your class includes two students from that particular ethnic group. During the discussion, they do not take part in the discussion and won’t make eye contact with you.
Poll #6

• Write two or three debriefing questions for this case. Be guided by the learning objectives you have for this case.
Directions for PBL Teams

1. Review the problem and clarify the meaning of unfamiliar terms.
2. Analyze and define the problem (with or without your guidance).
3. Identify and organize the knowledge they already have to solve the problem, including identifying and ignoring any extraneous info given.
Directions for PBL (continued)

4. Identify the new knowledge they need to acquire to solve the problem—the learning issues.

5. Organize and rank-order the learning issues and set objectives for outside research (with or without references from you).

6. Divide the work among themselves.
Directions for PBL (continued)

7. Conduct the assigned research individually.
8. Meet to share research findings and conduct more research as needed.
9. Merge their newly acquired and prior knowledge into the “best possible” solution (making PBL constructivist).
10. Write up or orally present their solution.
PBL Problem

• Your group is an infectious disease team at a university hospital in Charlotte, NC. A female patient in her late 30s comes into the office presenting a red rash on her legs, thighs, and forearms, muscle and joint aches in the same areas, and fatigue. Your team concurs the cause could be (1) a fungal infection prevalent along the Texas Gulf Coast, (2) Rocky Mountain Spotted Fever (from a Southeastern U.S. tick bite), or (3) a not-yet-identified food allergy.
• The results of the test for conditions #1 and #2 will take at least one week. Food allergy testing will take at least two weeks.

• What is the wisest sequence of actions for your team to take to diagnose and treat the disease? Justify each decision you decide to take.
Poll #7

• You’re an undergraduate in a pre-med course who just got this assignment as a member of a group of four. You don’t know your fellow group members, and you’ve never heard of problem-based learning or have been given such an open-ended and technically advanced problem before.
Emotionally, how do feel at the moment? Check all that apply.

a. Confident; my team and I can do this.
b. Know I can get an A.
c. Bewildered; don’t know where to start.
d. Concerned; need more guidance.
e. Anxious about my grade
f. Scared out of my mind!
Poll #8

• If your group is to solve this PBL problem, you have to identify your “learning issues” early on. That is, what don’t you know now that you need to research? Start listing these.
Assess Students’ Solutions with a Rubric

Possible criteria of assessment

• Problem definition
  – Clear
  – Reasonable
  – Complex

• Relevant known info identified

• Relevant unknowns identified and supplied

• Quality of outside sources used
Possible Rubric Criteria (continued)

• Breadth of outside sources used
• Strong rationale for proposed solution
  – Feasible
  – Cost-effective
  – Comprehensive resolution
• Limitations of proposed solution identified
Poll #9

• Do you use any other criteria to assess your students’ solutions to cases or problem-based learning problems?
Interested? Decide...

• Learning outcomes cases/PBL will serve
• How much time you want to invest
  – Cases or PBL?
  – Type of case or problem?
  – How to integrate into course?
• Whether to use available cases/problems or to write your own.
Multiple Chat Sharing...
Questions and Discussion

Be inspired. Be inspiring.
Upcoming Sessions
Final Thoughts

• Evaluations
• Certificates of Participation
Thank you!

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