Problem-based Learning

Development and Process
“The principal idea behind PBL is that the starting point for learning should be a problem, a query, or a puzzle that the learner wishes to solve.”

*Boud (1985)*
PBL: Philosophy of and/or approach to learning which........

► Arises from a problem/situation

► Is student centered

► Leads to understanding

► May or may not lead to solution of the problem
Part 1

► Kim: I can’t believe you’re leaving again next week! Weren’t you just on a trip 2 weeks ago?

► Pat: We talked about this months ago. I committed to this trip almost a year ago.

► Kim: Weren’t you there just last December?

► Pat: I was. What’s that have to do with anything?
Part 1

► Kim: Haven’t you been following the news? Things are different now. Lots of things!

► Pat: Like what?

► Kim: You’re impossible! You need to get your head out of your precious journals and read the paper occasionally.

► Pat: OK. OK. Just tell me what’s bothering you? I travel all the time. What’s gotten into you about this trip?
Questions?

What questions are raised in your mind with this interaction?
Pat is heading to New Delhi for an international conference. Following several days at the conference, he is traveling to Beijing to visit a university there. After that he is heading home to Birmingham.
Questions?

► What things might be troubling Kim? Refine the list of things identified in Part 1.

► What do you need to learn more about between now and the next time we meet?
What it’s NOT!
What I know best I have taught...

...the individuals learning the most in [teacher-centered classrooms] are the professors. They have reserved for themselves the very conditions that promote learning:

• actively seeking new information,
• integrating it with what is known,
• organizing it in a meaningful way, and
• having a chance to explain it to others.

Huba and Freed, *Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning*, 2000
Informative Group Dialog Thoughts Thoughts Thoughts Ideas Ideas Ideas Ideas Ideas Ideas
Concerns Concerns Suggestions Suggestions Feedback Feedback Feedback Feedback Thoughts Thoughts Thoughts

What it IS
What is Required?

► Development and selection of appropriate **problems** which will lead students beyond superficial understanding of facts/concepts

► **Tutors** (facilitators) who understand and support the purpose of PBL and the role of tutors in PBL.
Characteristics of Good PBL Problems

- Engage students; real world
- Require decision-making; judgment
- Multi-stage; Complex enough to necessitate group cooperation
- Initial questions open-ended based on previously learned knowledge
- Incorporate course content objectives
- Challenge development of higher order thinking skills
Developing a Problem

► Select idea/concept/principle – list learning objectives for the problem
► Real-world case (“story”)

What are your ideas?
Developing a Problem

► Staging the problem – how much info and when

► Teacher guide – provides overview for tutors on how to progress through case

► Identify potential resources
Tutor’s Role

► Ensure students know how to go about learning

► Ensure participation in tutorial discussions
Facilitating the Group Process

- Guide students through the PBL Process
- Communicate at the metacognitive level
Facilitating the Group Process

- Probe student’s knowledge/reasoning deeply
- Involve all students in PBL process
- Modulate the challenge/flow of the process
Facilitating the Group Process

- Monitor/Manage interpersonal dynamics
- Make educational diagnoses
- Model, support, then fade from the process
Facilitating the Group Process

► When in doubt:
  - Opt for student-centered action
  - Ask for problem synthesis
  - Ask “Why?”
Components of the PBL Process*

► Beginning
► Starting a New Problem
► Self-directed Study
► Problem Follow-up
► Performance/Presentation

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Components of the PBL Process

► Beginning
  - Introductions
  - Climate Setting
    - Tutor’s role/Students’ role
    - Open thinking; everyone contributes
    - Silence is assent
Components of the PBL Process

- Starting a New Problem
  - Encountering the problem
  - Reasoning through the problem
    - Hypothesis generation
    - Problem information
    - Learning issues
    - Action plan
  - Commitment as to probable outcome
  - Learning issue shaping & distribution
  - Resource identification
Components of the PBL Process

- Self-directed Study
Components of the PBL Process

- Problem Follow-up
  - Resources used & their critique
  - Reassess the problem
    - Hypothesis revision
    - Problem information: apply new, inquire more
    - Learning issues: identify new/refine old
  - Action plan
- Knowledge abstraction & summary
- Self & peer evaluation
- Tutor & group evaluation
Components of the PBL Process

- Performance/Presentation
  - Final discussion of resolution of problem
  - Formal assessments
Formal Assessments

- Written examinations
- Oral assessments of clinical problem solving
- Skill performance assessments
- Triple jump
Issues for Thought

► Is PBL for everyone?
  - Time: faculty & students
  - Resources: faculty & library
  - Buy-in

► Is PBL "better" than traditional teaching methods?
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Resources


► PBL problem clearing house University of Delaware http://www.udel.edu/pblc


► PROBLEM-BASED LEARNING BIBLIOGRAPHY Southern Illinois University School of Medicine http://edaff.siumed.edu/dept/Pblbib.htm

Skill Course Objective:

Upon completion of tutorials, self-directed learning, and labs, the student will demonstrate clinical skill in designing and implementing physical therapy plan of care for management of neuromuscular dysfunction resulting in impairment, disability, or handicap including: strength and endurance exercises, positioning, relaxation, mobilization strategies, functional mobility strategies, and lifestyle changes and behavioral management.

Assessment Tools

- Individual Student Participation
- Oral Assessments
- Skill Performance Assessments