

Problem-Based Learning: Technology and Student-Centered Learning



George H. Watson,
University of Delaware
ghw@udel.edu



www.udel.edu/pbl/bcc-cuny/

*PBL Workshops at
Bronx Community College - CUNY
October 20, 2006*



An important question:

Given the amazing advances in technology

and the dramatic change in the environment of our students,

Can we afford to continue teaching the way we were taught?



What I know best I have taught...

...the individuals learning the most in the typical classrooms are the teachers there. 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
explaining it to others.

Page 35, Huba and Freed, *Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning*, 2000



What is Problem-Based Learning?

“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)



What is Problem-Based Learning?

PBL is a learning approach that challenges students to “learn to learn,” working cooperatively in groups, to seek solutions to real world problems.



What is Problem-Based Learning?

PBL prepares students to think critically and analytically, to find and use appropriate learning resources, to communicate effectively, orally and in writing, to work well as members of a team.



What are the Common Features of PBL?

- Learning is initiated by a problem.
- Problems are based on complex, real-world situations.
- All information needed to solve problem is not initially given.
- Students identify, find, and use appropriate resources.
- Students work in permanent groups.

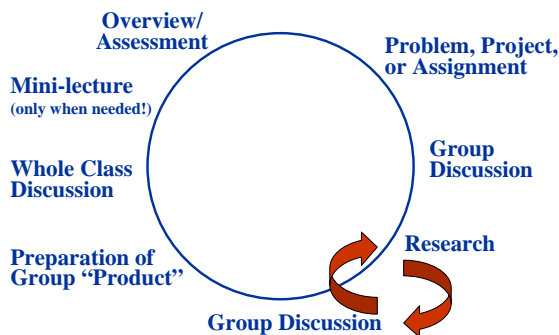


PBL: The Process

- Students are presented with a problem. They organize ideas and previous knowledge.
- Students pose questions, defining what they know and do not know.
- Assign responsibility for questions, discuss resources.
- Investigate learning issues.
- Reconvene, explore newly learned information, refine questions.



Problem-Based Learning Cycle



Characteristics Needed in College Graduates

- High level of communication skills
- Ability to define problems, gather and evaluate information, develop solutions
- Team skills -- ability to work with others
- Ability to use all of the above to address problems in a complex real-world setting

Quality Assurance in Undergraduate Education (1994)
Wingspread Conference, ECS, Boulder, CO.



Problem-Based Learning: From Ideas to Solutions through Communication

January 17-19, 2007

For registration, please visit www.udel.edu/inst/jan2007

This three-day workshop will demonstrate and model ways that PBL can be used effectively in all disciplines, in upper and lower division courses, and in all size classes.

One focus of this program will be writing effective problem-based materials; participants will leave the session with new or revised problems for use in their courses.

Another focus will be engaging students in research and communication as part of the process of PBL.



UD PBL online

PBL at UD
www.udel.edu/pbl

PBL Clearinghouse
www.udel.edu/pblc

Watson homepage
www.physics.udel.edu/~watson

This presentation
www.udel.edu/pbl/bcc-cuny