What is PBL?

Institute for Transforming Undergraduate Education

University of Delaware

Problem-Based Learning: From Ideas to Solutions through Communication

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Characteristics Needed in College Graduates

Excellent communication skills

Ability to define problems, gather and evaluate information, develop solutions

Address problems in a complex real-world setting

Team skills – ability to work with others

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

Carnegie Foundation Recommendations

Make research-based learning the standard.

Build inquiry-based learning throughout the four years.

Link communication skills and course work.

Use information technology effectively.

Cultivate a sense of community.

Boyer Commission, 1998

What is PBL?

"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, D. (1985) PBL in perspective. In "PBL in Education for the Professions," D. J. Boud (ed); p. 13.

What Is PBL?

"…careful inspection of methods which are permanently successful in formal education…will reveal that they depend for their efficiency upon the fact that they go back to the type of situation which causes reflection out of school in ordinary life. *They give pupils something to do, not something to learn; and if the doing is of such a nature as to demand thinking, or the intentional noting of connections; learning naturally results.*"

John Dewey (1916)

What is PBL?

"…a process of acquiring understanding, knowledge, skills and attitudes in the context of an unfamiliar situation, and applying such learning to that situation."

What are the Common Features?

Learning is initiated by a problem.

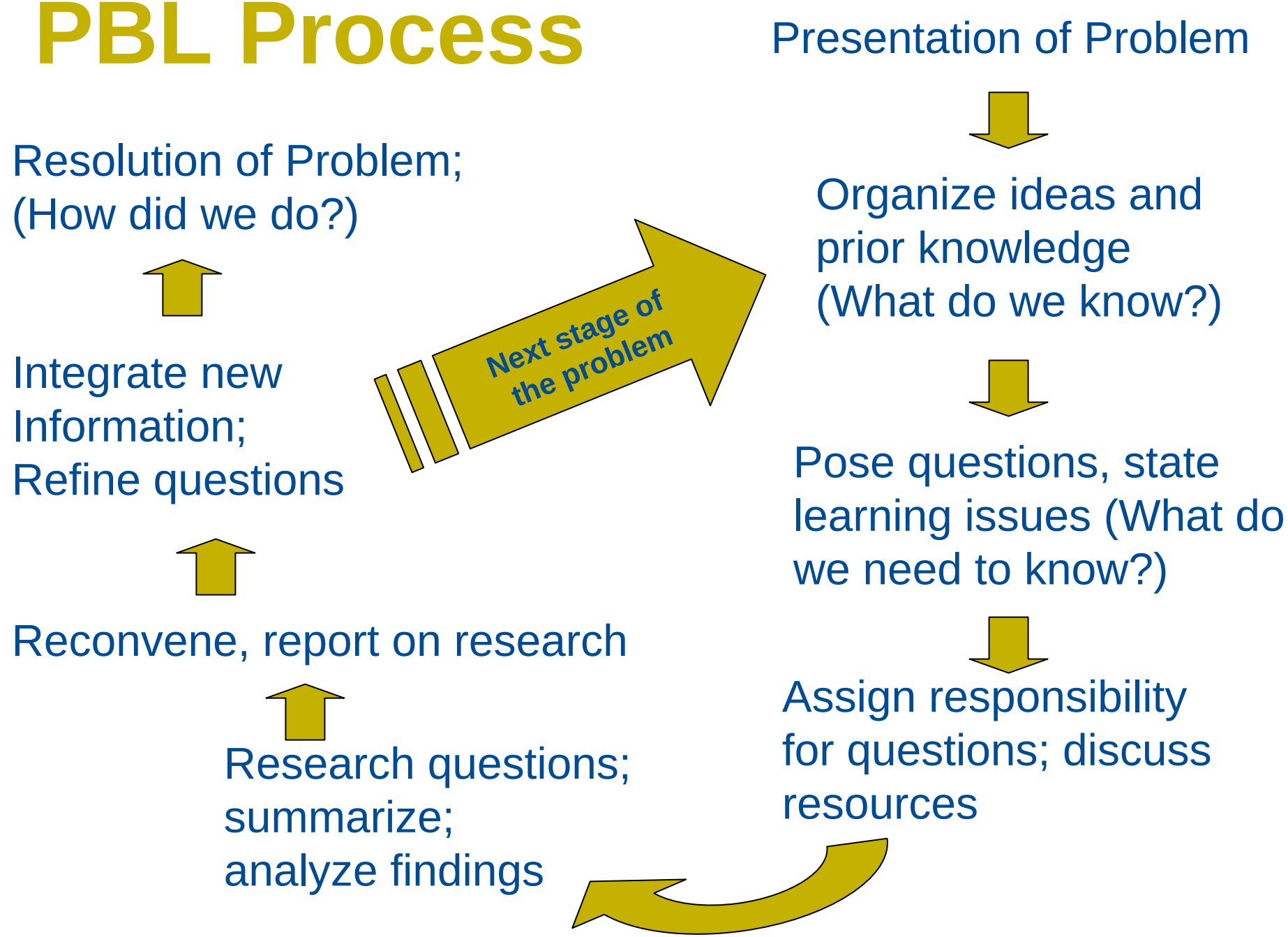
Problems are based on complex, real-world situations.

All information needed to solve problem is not given initially.

Students identify, find, and use appropriate resources.

Students work in permanent groups.

PBL Process


Presentation of Problem
Organize ideas and prior knowledge (What do we know?)
Pose questions, state learning issues (What do we need to know?)
Assign responsibility for questions; discuss resources
Research questions; summarize; analyze findings
Reconvene, report on research
Integrate new Information; Refine questions
Resolution of Problem; (How did we do?)
Next stage of the problem

A Typical Day…

Common Classroom Models

Medical school

Floating Facilitator

Peer Facilitator

“Hybrid”

Choosing a Model…

Class size

Intellectual maturity of students

Student motivation

Course learning objectives

Instructor’s preferences

Availability of peer facilitators

Medical School Model

Dedicated faculty tutor

Groups of 8-10

Very student-centered environment

Group discussion is primary class activity

A good choice for

Highly motivated, experienced learners

Small, upper-level seminar classes

Floating Facilitator Model

More structured format; more instructor input into learning issues and resources

Group size: 4

Instructor rotates through groups: Asks questions, directs discussions, checks understanding

Other class activities:

- Groups report out
- Whole class discussions
- (Mini-)lectures

A good choice for

Less experienced learners

Classes of all sizes

Peer Facilitator Model

Advanced undergraduates serve as facilitators:

Help monitor group progress and dynamics

Serve as role models for novice learners

Capstone experience for student facilitators

A good choice for

Classes of all sizes

“Hybrid” PBL

Non-exclusive use of problem-driven learning in a class.

May include separate lecture segments or other active-learning components.

Floating or peer facilitator models common.

An entry point into PBL.

Reaches students at many levels.

Reflections and Questions