

Experience It Yourself: An Introduction to Problem-Based Learning



*Institute for Transforming
Undergraduate Education*

University of Delaware



PBL2002: A Pathway to Better Learning

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John Dewey...

“True learning is based on discovery guided by mentoring rather than the transmission of knowledge.”

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.



Recommendations from the Carnegie Foundation

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.



Cooperative Learning: What the research shows

Academic Success

higher achievement, including knowledge acquisition, accuracy, creativity in problem-solving, and higher reasoning level.

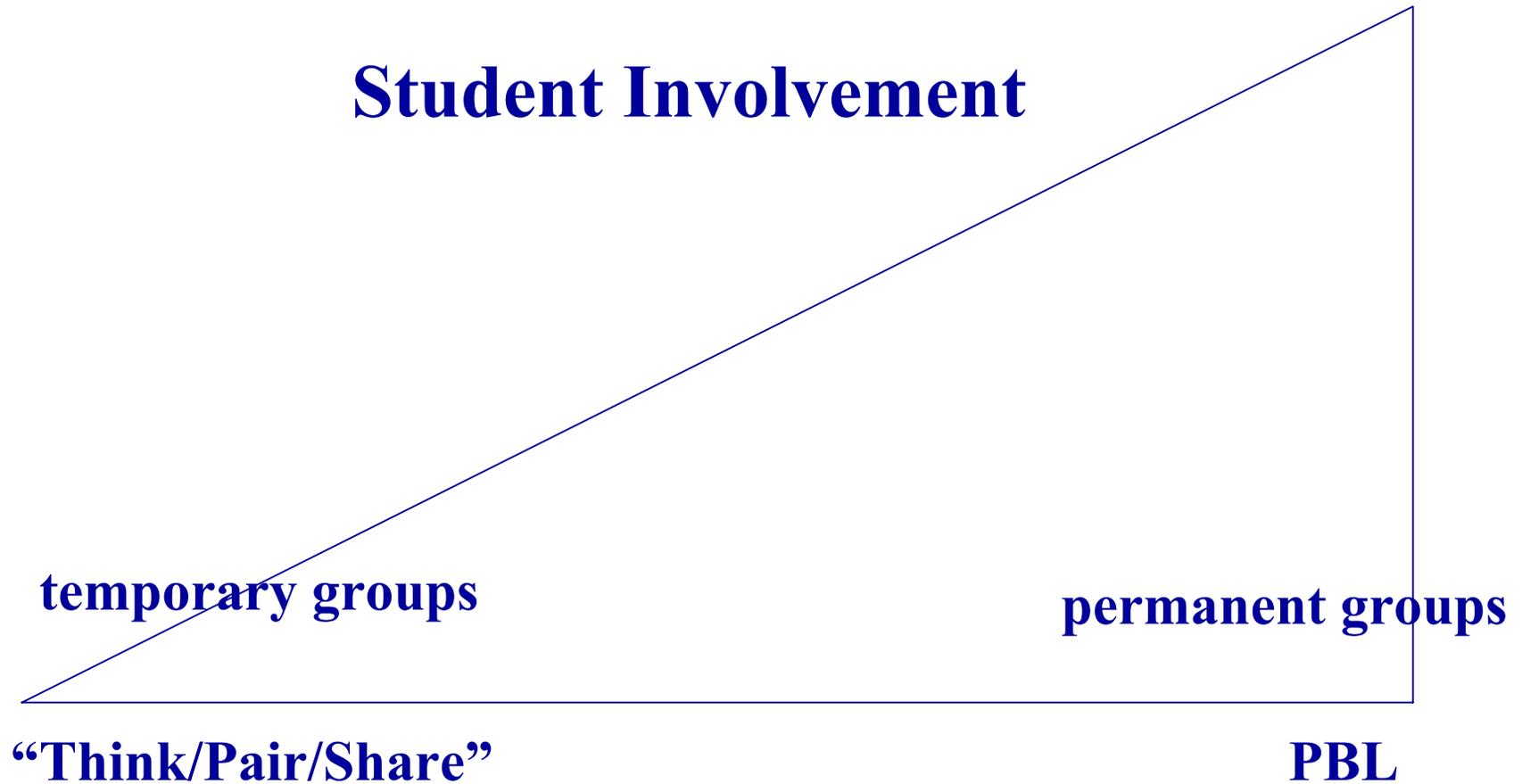
Attitude Effects

persistence towards goals, intrinsic motivation, applying learning in other situations, greater time on task



Methods of Active and Group Learning

Student Involvement





What is Problem-Based Learning?

PBL is an instructional method that challenges students to “learn to learn,” working cooperatively in groups to seek solutions to real world problems.

PBL prepares students to think critically and analytically, and to find and use appropriate learning resources.



“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 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.

Learning is active, integrated, cumulative, and connected.



PBL: The Process

Students are presented with a problem.

They organize ideas and previous knowledge.

Students pose questions, defining what they know and don't know.

Assign responsibility for questions, discuss resources.

Reconvene, explore newly learned information, refine questions.



The Problem-Based Learning Cycle

Overview

**Problem, Project,
or Assignment**

Mini-lecture

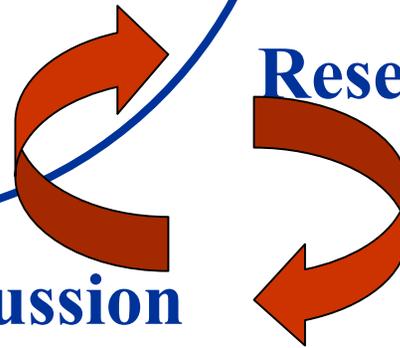
**Whole Class
Discussion**

**Group
Discussion**

**Preparation of
Group “Product”**

Research

Group Discussion





Compelling Features of PBL for New Adapters

Models itself on how students learn.

With information overload, prepares students to be life-long learners.

More realistic curriculum prepares students for world outside the classroom.

Ensures more up-to-date materials, content.

Generates enthusiasm among faculty.

Boud and Feletti, 1998



PBL: Experience It Yourself

Whose Baby Is It?



Courtesy of University of Utah Andrology Microscopy Lab
http://www.med.utah.edu/andrology/photo_gallery.html



PBL: Experience It Yourself

- 1. Who are the parents?
How could they tell?**
- 2. What are the implications for
the two couples?**
- 3. What questions should they
ask?**
- 4. What are the possible
recourses?**





Stage Two

- 1. How does race affect the case?**
- 2. Each group should discuss one of the following issues that need to be resolved:**
 - legal**
 - social**
 - ethical**
 - health**





Stage Two (cont.)

For group discussion:

How should this case be resolved?





Stage Three

For group discussion:

**Do you agree with the
court decision?**





Reflections and Questions

