Problem-based Learning (PBL) Pedagogy Guide

**Defined:** PBL is commonly defined as an instructional method that challenges students to “learn to learn,” working collaboratively 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 PBL movement was pioneered in the science and medicine fields in the late 60s and was later adapted to undergraduate instruction. PBL can be adapted to any discipline and can be combined with lecture to form hybrid models of teaching. Students can improve their problem solving skills, research skills, and social skills through PBL. Research indicates that with PBL, students gain improvement in skills such as self-direction, critical thinking and reasoning, data gathering, and self-evaluation.

**NOTE:** EDGE activities need not be complex to be effective!

PBL allows students to participate in relevant learning experiences, working with the following learning materials:

- The problem situation,
- A list of objectives that the student is expected to master while working on the problem,
- A reference list of materials that pertains to the basic objectives, and
- Questions that focus on important concepts and applications of the knowledge base.

In classes using PBL, students work on problems in project teams and are evaluated in multiple ways by instructors, peers, and themselves using questionnaires, interviews, observations, and other assessment methods.

**A Best Practice Model for Problem-based Learning** (from Dochy, Segers, Van den Bossche, & Gijbels, 2003)

1. Identify course objectives and write a problem(s) for each of the objectives. PBL is based on “ill structured” problems – those that may have multiple “correct” answers. Determine the weight of the assignment within the context of the course grade.

2. Determine what resources students will need and what resources are available to the student to solve these problems. Consider planning a library orientation for students in collaboration with librarians.

3. Determine how students will present their answers and provide a rubric that explains how the project will be graded.

4. Prepare students for a different class culture. Inform students about PBL, how the class will be conducted, what they are expected to do, and how they will be graded.

5. Demonstrate / model problem-solving techniques for students and help students find the resources they need rather than giving them the answers.

6. Give students class time to work as a group.

7. Provide feedback about the quality and completeness of the problem’s solution, keeping in mind that the thinking and rationale that went into the solution are as important as the solution itself.

**Web Resources**

Institute for Transforming Undergraduate Education, PBL Clearinghouse, University of Delaware
http://www.udel.edu/inst/

The Center for PBL at Samford University
QEP Initiatives as an Entry Point to Problem-based Learning

Days of Service:
- **Description:** The QEP Office organizes four college-wide days of service each academic year: 9/11 Day of Service and Remembrance (September), Make a Difference Day (October), Martin Luther King, Jr. Day of Service (January), and Global Youth Service Day (April). On these days, GPC partners with community-based organizations near GPC campuses, and students serve their communities to meet community-identified needs.
- **Example:** Provide students with a problem situation and a list of objectives that the students are expected to master while working on the problem. Students will also need a reference list of materials that pertain to the basic objectives, and questions that focus on important concepts and applications of the knowledge base. A Day of Service experience can serve as reference material to help students address the problem situation.

GPC Reads:
- **Description:** GPC Reads is a college-wide, interdisciplinary reading club that engages faculty, staff, and students in reading books by regional authors, provides opportunities for these authors to visit campus and engage with the GPC community, and coordinates co-curricular learning opportunities focused on the themes of the books.
- **Example:** Provide students with a problem situation and a list of objectives that the students are expected to master while working on the problem. Students will also need a reference list of materials that pertain to the basic objectives, and questions that focus on important concepts and applications of the knowledge base. The GPC Reads selection can serve as reference material to help students address the problem situation.

Democracy Commitment:
- **Description:** The Democracy Commitment (TDC) is a national initiative providing a platform for the development and expansion of community college programs, projects, and curricula that engage students in civic learning and democratic practice.
- **Example:** Provide students with a problem situation about civic learning, democratic principles, or democratic practices and a list of objectives that the students are expected to master while working on the problem. Students will also need a reference list of materials that pertain to the basic objectives, and questions that focus on important concepts and applications of the knowledge base.

Bridging Cultures:
- **Description:** Bridging Cultures to Form a Nation is a national initiative supported by the National Endowment for the Humanities (NEH) and the Association of American Colleges and Universities (AACU). At GPC, the project seeks to facilitate the study and application of civic engagement and democratic thinking regardless of citizenship and to broaden the perception and understanding of what it means to be a global citizen.
- **Example:** Provide students with a problem situation about civic engagement, democratic thinking, and/or global citizenship and a list of objectives that the students are expected to master while working on the problem. Students will also need a reference list of materials that pertain to the basic objectives, and questions that focus on important concepts and applications of the knowledge base.

For more information about Problem-based Learning or utilizing QEP initiatives as an entry point to Collaborative Learning, please contact Sean Brumfield (sean.brumfield@gpc.edu, 678-891-2305) or Mary Elizabeth Tyler Boucebci (maryelizabeth.tylerboucebci@gpc.edu, 678-891-3174).