



## Problem-Based Learning: A Strategy for Enhancing the Relevance Connection

**P**roblem-based learning (PBL) is a strategy that is receiving an increasing amount of attention in higher education. Its origins are often attributed to Thomas Corts of McMaster University in Canada who developed this technique as a way of teaching medical students (Rheem, 1998). Duch, Groh, and Allen (2001) provide a description of the PBL process:

In the problem-based learning approach, complex, real-world problems are used to motivate students to identify and research the concepts and principles they need to know to work through these problems. Students work in small learning teams, bringing together collective skill at acquiring, communicating, and integrating information. (p. 6)

PBL provides an excellent mechanism for helping first-year students gain and practice skills that will serve them well throughout their higher education experience and beyond. In particular, PBL helps students develop critical thinking, improve verbal and written communication techniques, learn to work as a member of a team, seek solutions to real-world problems, and contextualize the acquisition of new knowledge and skills. Typical phases of the PBL process include

- ① Presenting the problem or scenario
- ② Clarifying the questions involved in the problem
- ③ Generating possible hypotheses
- ④ Gathering information related to the problem—typically done with team members investigating various components of the issue
- ⑤ Synthesizing the derived data
- ⑥ Creating a final response and action plan

Beyond these basics, the construction and execution of PBL scenarios can be taken in a number of directions based on course-related learning outcomes. The presented scenarios can be built upon actual facts (e.g., current news reports, data, historical documents, audio/video clips) or imagined scenarios (e.g., fictional charts, reports, and research based on real events). Through group discussions and individually written responses, the scenarios should require students to grapple with conflicting data and points of view, their personal values and ethical dilemmas, and interdisciplinary perspectives on real-world issues and concerns. In addition to discussions and reflection papers, PBL activities often result in the creation of one or more final products (e.g., presentations, memoranda, reports, songs, poems). PBL can be implemented in a classroom setting or within an online learning structure; in large or small classes; and over the course of an entire semester, a block of time within a course, or in a single class. Lastly, PBL provides a great venue for the creation of interdisciplinary learning opportunities. A list of sample topics and disciplines relevant to those topics are offered in the text box on page 2.



...present students with a complex, real-world challenge in which the scenario, role, process, and product are all authentic; they must then demonstrate that they have the skills and knowledge to complete the task. Thus students actively participate in the problem-solving exercise rather than passively selecting answers—which runs counter to the assumption that if students do well on a multiple-choice test that focuses solely on content, they will know how to use the information in a real-world context.

(Chun, 2010, p. 2)

**Sample PBL Topics/Scenarios and Suggested Disciplines**

- **Life and death decisions in a case of Amyotrophic Lateral Sclerosis**—A man wishes to end his life so that he can donate his organs to others and not suffer the agonizing effects of Lou Gehrig’s disease (Political Science, Natural Sciences, Business, Philosophy).
- **Creation or Evolution?**—How should the Adamsville Board of Education decide on guidelines for adopting new textbooks for the local schools? (Education, Philosophy, Natural Sciences, Religion).
- **Storing Hazardous Wastes**—Clintonville is presented with the opportunity to create a hazardous waste storage facility. It will bring tremendous amounts of money into the city’s coffers but also presents a serious health risk for city residents (Natural Sciences, Political Science).
- **Fast Food in the School Cafeteria**—School officials are debating the options of serving healthy food in the school cafeteria, which students may refuse to buy, or entering into an agreement with a fast food restaurant, which will result in significant profits for the chain and income for the school (Business, Education, Marketing).



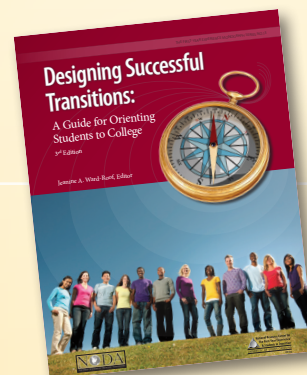
- **Banning Facebook**—University officials are considering the possibility of banning Facebook on campus in favor of a locally sponsored and monitored social media network (First-year seminar, Communications).
- **Shakespeare Lives!**—Students are given the task of reworking the plot of a Shakespearean play into a 21st century scenario (English Composition, World Literature, World History).

Dolmans, de Grave, Wolfhagen, and van der Vleuten (2005) balance their praise of problem-based learning with a caution about the level of sophistication and planning that is necessary to effectively develop and facilitate a problem-based learning scenario. They identify the challenges of creating problem-based learning scenarios that are too tightly defined (e.g., the solution is created without any level of effort) or too loosely defined (e.g., the possible solutions are so large or variable that critical analysis becomes a challenge). It can also be a challenge helping students learn to work in a group for the common good and toward the goal of generating a solution to the presented problem or scenario. Duch (2001) delineates the qualities of a high-quality PBL scenario:

- The topic of concern captures the attention and interest of participating students.
- Students are required to make judgments and decisions by analyzing a variety of options in choosing their best course of action.
- The proposed problem has a level of complexity that involves all team members in the data gathering and decision-making phases.
- Questions are open-ended and invite group members to participate.
- There is a direct connection between the PBL scenario and course learning outcomes.

*New Titles*

From The National Resource Center



Monograph No. 13

**Designing Successful Transitions: A Guide for Orienting Students to College (3rd edition)**

Jeanine A. Ward-Roof, Editor

Produced in association with the National Orientation Directors Association

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Monograph No. 53

**Organizing for Student Success: The University College Model**

Scott E. Evenbeck, Barbara Jackson, Maggy Smith, Dorothy Ward, & Associates

Produced in collaboration with the Association of Deans and Directors of University Colleges and Undergraduate Studies

ISBN 978-1-889-27170-5. 180 pages. \$40

Look for these publications available October 2010

## The Process of Problem-Based Learning

Consider the following example of a problem-based learning scenario that would be appropriate in a first-year seminar:

**The Scenario: *I Know You Cheated***—A friend has plagiarized a paper that you wrote. Failing this course will eliminate any possibilities of your friend graduating from college at the end of the semester.

- Clarify questions involved in the problem (e.g., What are my responsibilities to my friend? Am I just as guilty if I don't report this cheating?)
- Generate possible hypotheses (e.g., talk with a faculty member without revealing the actual people involved; talk directly with my friend and encourage him or her to admit to cheating; write an anonymous note)
- Gather information related to the problem—typically done with team members investigating various components of the issue (e.g., engaging in group discussions, surveying fellow students, looking for journal articles about plagiarism)
- Synthesize the derived data (e.g., trying to reach consensus among members of a group addressing this problem, summarizing the pros and cons of the possible options)
- Create a final response and action plan (i.e., make a decision, summarize the decision, and provide a rationale for this choice)

Think about ways you might use PBL as an integral part of the learning experiences in the courses that you teach. Through this strategy, you will be able to facilitate deeper thinking and action on the part of your students. It is a beautiful thing to watch and experience!

### Problem-Based Learning Resources

#### Problem-Based Learning at the University of Delaware

A wonderful resource containing references, a link to the Problem-Based Learning Clearing-house and an abundance of PBL samples.

<http://www.udel.edu/pbl/>  
<https://primus.nss.udel.edu/Pbl/>

#### The Interdisciplinary Journal of Problem-Based Learning

An excellent resource on the nuances of PBL from Purdue University

<http://docs.lib.purdue.edu/>

#### PBLIST (from IUPUI)

A moderated Internet discussion list on problem-based learning in health care

[http://pbln.imsa.edu/resources/pbl\\_web\\_resources.html](http://pbln.imsa.edu/resources/pbl_web_resources.html)

#### Emerging Perspectives on Learning, Teaching, and Technology web site

A clearly written overview of problem-based learning and the nuances of classroom implementation.

[http://projects.coe.uga.edu/epltt/index.php?title=Problem\\_Based\\_Learning](http://projects.coe.uga.edu/epltt/index.php?title=Problem_Based_Learning)

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17<sup>th</sup> National Conference on  
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November 13-15, 2010

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 The First-Year Experience®  
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### The Toolbox

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*The Toolbox* is an online professional development newsletter offering innovative learner-centered strategies for empowering college students to achieve greater success. The newsletter is published six times a year by the National Resource Center for The First-Year Experience® and Students in Transition at the University of South Carolina, Columbia, SC.

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# WHAT'S HAPPENING

## At The National Resource Center

### Conferences and Continuing Education

#### Online Courses

The National Resource Center for The First-Year Experience and Students in Transition is embarking on additional professional development opportunities for educators at colleges and universities by offering online courses on topics of interest in higher education. The courses are designed to provide participants with the same content and opportunities for interaction with peers and with the instructor as traditional (i.e., classroom-based) learning environments while advantage of pedagogy and teaching techniques that are not possible or common in those settings. The courses will use tools such as e-mail, threaded discussions/forums, listservs, and blogs. For more information, visit <http://www.sc.edu/fye/oc>

#### 2010 Midwest First-Year Conference: Strengthening the Student Experience

October 1, 2010  
Elgin, IL

This regional one-day drive-in conference provides a forum for academic and student affair professionals to share ideas, resources, and engaging pedagogy to enhance their instruction of first-year students. The National Resource Center for The First-Year Experience and Students in Transition Director Jennifer R. Keup will give the plenary address and an educational session at the event. NRC is proud to be a cosponsor of this conference. For more information, visit <http://www.mfyc.org/index.php>

#### Institute on Peer Educators

October 17-19, 2010  
Indianapolis, IN

The National Resource Center for The First-Year Experience and Students in Transition invites professionals involved in campus programs and initiatives that engage undergraduate students as peer educators to participate in the Institute on Peer Educators. This institute will provide participants with valuable information as well as effective strategies and concepts that positively impact peer leadership experiences and enhance program outcomes. A diverse faculty will share expertise regarding the use of peer educators in a variety of areas, such as new student orientation, residence life, first-year seminars, and Supplemental Instruction. For more information, please visit <http://www.sc.edu/fye/ipe>

#### 17th National Conference on Students in Transition

November 13-15, 2010  
Houston, TX

Early Registration Deadline: October 22, 2010

The SIT conference offers participants the opportunity to share with and learn from each other the latest trends, initiatives, best practices, ideas, research, and assessment strategies focused on supporting student success through the full spectrum of college transitions. For more information on the conference, please visit <http://www.sc.edu/fye/events/sit/>

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The National Resource Center for The First-Year Experience and Students in Transition is on *Facebook*. Visit our homepage at [www.sc.edu/fye](http://www.sc.edu/fye) and click on the *Facebook* link in the left column to be directed to our *Facebook* page. Becoming a fan gives you unique access to a network of educators committed to student college success.

## Institute on Peer Educators

October 17-19, 2010  
Indianapolis, Indiana



Register online at  
[www.sc.edu/fye/ipe](http://www.sc.edu/fye/ipe)

## 30th Annual Conference on The First-Year Experience

February 4-8, 2011

Atlanta, GA

*Proposal Deadline: October 11, 2010*

The First-Year Experience conferences are meetings where educators from two- and four-year institutions come together to openly share ideas, concepts, resources, assessment tools, programmatic interventions, and research results focused on the first college year. Registration and proposal information is available at <http://sc.edu/fye/events/annual/>

## Save the Date

### Institute on Transfer Student Success

April 17-19, 2011

Costa Mesa, CA

## NRC Exhibits and Presentations

Like many of you, the staff of the National Resource Center for The First-Year Experience and Students in Transition plan to be actively involved in the fall conference circuit. We are pleased to share the following upcoming opportunities to hear about the results of research studies conducted by the Center, learn about best practices, and to meet NRC staff members.

### *Beyond the First Year: Charting Student Success into the Sophomore-Year Experience*

Educational session by Jennifer R. Keup, NRC Director, at the 2010 Midwest First-Year Conference: Strengthening the Student Experience, Elgin Community College, Elgin, Illinois, October 1, 2010.

*The 2009 National Survey on First-Year Seminars: Reflecting on Innovations in the Undergraduate Curriculum.* Presented by Tracy Skipper, NRC Assistant Director for Publications, at the National Orientation Directors Association Conference, St. Louis, Missouri, November 6-9, 2010.

*Recent Findings and New Directions for Research on High-Impact Educational Practices in the Transition to College.* Roundtable presentation by Jennifer R. Keup, NRC Director, and Ryan D. Padgett, NRC Assistant Director for Research, Grants, and Assessment, at the 2010 ASHE Conference, Indianapolis, Indiana, November 17-20, 2010.

## Research

### Grants

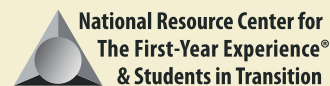
The ACPA - College Student Educators International Commission for Admissions, Orientation and the First Year Experience (AOFYE) and the National Resource Center for The First-Year Experience and Students in Transition invite applicants for their 2011 Research Grant Competition. AOFYE and the National Resource Center will jointly award one grant in the amount of \$500 to promote original, descriptive, or evaluative research; philosophical studies; or institutional assessment or evaluation on issues surrounding admissions, orientation, and/or the first-year experience. All ACPA members are eligible to apply for this research grant. The application deadline is November 18, 2010. Details about the grant are available at [http://www.myacpa.org/comm/aofye/grant\\_guidelines.cfm](http://www.myacpa.org/comm/aofye/grant_guidelines.cfm)

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- **George R. Boggs**, president and chief executive officer of the American Association of Community Colleges

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