

Teaching Matters

The Teaching and Learning Center of the University of the Sciences in Philadelphia

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How can we promote greater learning?

Phyllis Blumberg, Ph.D.

Nationally higher education is in the midst of many major changes. For example, industries, the government, and society at large are expecting more from college graduates. Knowledge within the scientific and clinical disciplines has changed. The student population is much more diverse than it was even twenty years ago. All of these changes have led faculty and administrators, as well as employers of our graduates to become engaged in dialogues addressing if the America's colleges and universities are achieving their intended purposes. Many have questioned how effective have we, as a nation, been in preparing college graduates for leadership roles. Most people agree that leaders need critical thinking, problem solving, interpersonal and communication skills. Therefore, one of the major purposes of higher education is to help students develop these skills. This emphasis on helping students to develop these critical skills places a greater focus on student learning.

Possible ways to promote greater learning are through learner-centered approaches. This article describes alternative learner-centered environments that we could try. It is not necessary to implement all of these methods; making small changes can foster a greater learner-centered culture. All of these suggestions come from the current higher education literature.

LEARNER-CENTERED APPROACHES:

Increased use of student or learner-centered approaches focuses the educational activities on the students and how they learn. Characteristics of these learner-centered approaches to education may include multiple and diverse opportunities for active learning, learning within a social context, providing students environments to see the relevance and importance of what they are learning, and providing varied opportunities to succeed. Understanding and acknowledging students' self-efficacy of their own academic abilities can help students to achieve greater academic success. The impact of a college education is largely determined by the student's quality of effort and his/her level of involvement in all aspects of college life.

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Teaching Matters is published by the Teaching and Learning Center of the University of the Sciences in Philadelphia. Information, inquiries and comments are welcome and should be directed to:

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The Teaching and Learning Center is an educational resource for all USP faculty who are interested in helping their students become more effective learners. It maintains a current collection of books and periodicals relating to teaching and learning and student assessment.

CALL FOR OWL AWARD NOMINATIONS

Submit your application for the Teaching and Learning Center's Annual OWL Awards

INNOVATIONS WITH LEARNING

In memory of Patricia Leahy

The OWL Awards have been established to acknowledge faculty efforts in fine tuning the craft and furthering the art of teaching.

WHAT'S NEW IN YOUR CLASSROOM?

Faculty members' use of new instructional strategies typically require much planning time, a willingness to take risks, and delayed or even uncertain reward. The **OWL** Award recognizes those faculty members who are currently experimenting with their teaching.

If you have developed and used an instructional strategy, within the last 2 years, in a way that is unique for you, you are eligible to apply; there is no requirement that the strategy be totally original. Examples of such strategies are: giving an assignment designed to increase students' thinking skills; using small groups within a large class; using computers in a laboratory course: incorporating student analyses of case studies into a course; or developing an interdisciplinary approach to a topic. Groups of faculty members who have collaborated on the development of a new approach are also encouraged to apply.

Full-time University faculty members who are in their third year or more of employment at USP may apply. Individuals who receive an **OWL** in one academic year are not eligible to apply the next year, but may apply again any time after that.

If you would like to be considered for an **OWL** award please send a 1-2-page letter of application by **Friday, January 14th, 2000** to Phyllis Blumberg, Director of the Teaching and Learning Center.

All nominees will present an informal poster at an **OWL** presentation to be held in the spring.

PLEASE INCLUDE THE FOLLOWING INFORMATION IN YOUR LETTER.

Description: Provide a description, in some detail, of the new strategy. How you arrived at the idea? What characteristics of this strategy make it conducive to enhancing your students' learning? In what type of course did you use the strategy (elective/required/clinical/laboratory/classroom, number of students, etc.)? Feel free to attach copies of student assignments, class handouts, test questions, etc.

Rationale: What were your reasons for deciding to try something different? How did this approach differ from what you have done in the past?

Outcomes: What were your students reactions to the new strategy? What differences, if any, did the new strategy make in your students learning or in their attitude toward the subject? What evidence do you have for this?

Reflections: Will you continue to use the strategy? Why or why not? What, if anything, will you do differently next time? What advice would you have for colleagues who want to try new instructional strategies in their own classes?

Letters of application will be reviewed and **OWL** recipients determined by a review committee composed of the previous year's **OWL** recipients, assisted by the Teaching and Learning Center Director. ¢ (See Awardees profiled on p.3)

FALL CALENDAR OF USP, TEACHING AND LEARNING CENTER EDUCATIONAL EVENTS OCTOBER

T4 TABLE TALK: TEACHING AND TECHNOLOGY

USING ERES TO AID IN YOUR TEACHING.

TUESDAY, OCTOBER 5TH FROM 12-1PM

WILSON STUDENT CENTER 208

DISCUSSANTS: LISA DAVIS, NICOLE DUNCAN-KINARD & CLYDE OFNER

MONDAY, OCTOBER 11TH FROM 4-5PM

WILSON STUDENT CENTER 205

DISCUSSANTS: SUE BARKER, NICOLE DUNCAN-KINARD, TIM MCPHERSON, CLYDE OFNER & SUZANNE TRUMP

T5 TABLE TALK: TEACHING TIPS AND TECHNIQUES

STUDENT ASSESSMENT TECHNIQUES: MULTIPLE CHOICES

TUESDAY, OCTOBER 19TH FROM 12-1PM

WILSON STUDENT CENTER: FACULTY DINING ROOM

DISCUSSANTS: PHYLLIS BLUMBERG, ANNETTE IGLARSH, LILI VELEZ AND KEN LEIBOWITZ

MONDAY, OCTOBER 25TH FROM 4-5PM

WILSON STUDENT CENTER: FACULTY DINING ROOM

DISCUSSANTS: PHYLLIS BLUMBERG, ANNETTE IGLARSH, LILI VELEZ AND KEN LEIBOWITZ

NOVEMBER

T4 TABLE TALK: TEACHING AND TECHNOLOGY

DEVELOPING WEB SUPPORTED COURSES

TUESDAY, NOVEMBER 2ND FROM 12-1

J.W. ENGLAND LIBRARY: CONFERENCE ROOM

DISCUSSANTS: AMY CHRISTOPHER & PAM JOHNS

MONDAY, NOVEMBER 8TH FROM 4-5 PM

WILSON STUDENT CENTER 205

DISCUSSANTS: JOHN CONNORS, PAM JOHNS & JOHN PORTER

T5 TABLE TALK: TEACHING TIPS AND TECHNIQUES

USING MULTIPLE INTELLIGENCES TO IMPROVE STUDENT LEARNING

DISCUSSANT: LOIS PECK

TUESDAY, NOVEMBER 16TH FROM 12-1 PM AND

MONDAY, NOVEMBER 29TH FROM 4-5 PM

WILSON STUDENT CENTER: FACULTY DINING ROOM

JAMES PIERCE, BIOLOGY, "THE BIOTECHNOLOGY INVESTOR/ENTREPRENEUR GAME"

To give graduate students who have enrolled in his Biotechnology BS-764 course an appreciation of the business side of biotechnology, he developed an exercise that contains a number of novel elements that are used to motivate students to think about the topic from a "real life" economic and industry perspective. This new knowledge is then used to reinforce the scientific principals behind the exciting biotechnology revolution, which is the main theme of the course. The exercise "The Biotechnology Investor/Entrepreneur Game" requires students to utilize a number of different learning and communication skills. These include computer and internet-based information acquisition proficiency, oral presentation skills, written and visual presentation ability, business investing and economic decision making expertise.

The "Game" is a serious but fun activity, worth 20% of the student's total course grade. The goal for each student is to investigate a biotechnology company and develop a business proposal for prospective investors (other students). Each student in the class receives \$100,000 of USP money to invest in the BS-764 biotechnology stock market. The "winner" gets the "A"!

If you have further questions on the Biotechnology Investor/Entrepreneur Game, you can contact James Pierce at j.pierce@usip.edu ☛

CLYDE OFNER OF PHARMACEUTICS
"MAKING LECTURE NOTES AVAILABLE ELECTRONICALLY"

Clyde Ofner placed his class lecture notes on electronic reserve, or ERes. Each week Clyde would forward a disc, with his own lecture notes in a Word file, to the library. The notes were then placed in an electronic folder in the ERes course page, which students can then access through the USP Library <http://eres.usip.edu>.

There are two issues which made this strategy conducive to enhancing student learning: 1) students have quick convenient access to the material and 2) the material available to the student is the same material that the instructor used for lecture. Clyde used this innovation in a required fourth year pharmacy class of 149 students

This strategy promoted the students' learning of the lecture material. There may even be a "technology thrill" associated with using the website that helps motivate students to access the notes. Exposure to challenging questions from back exams also enhanced learning but this may only have applied to a few students.

CLYDE OFNER, PHARMACEUTICS, "MAKING LECTURE NOTES AVAILABLE ELECTRONICALLY" (CONTINUED)

Clyde will continue with this strategy and would like to expand the use of the ERes to include problem sets, solution sets, and back exams as they would also be helpful to students. Word 97 is the suggested word processing program to be used when preparing class material for inclusion on ERes.

If you have further questions on the use of ERes, you can contact Clyde Ofner at c.ofner@usip.edu ☛

SPECIAL INTEREST GROUPS FORMING

The Teaching and Learning Center is coordinating special interest groups on various educational topics. These groups will meet periodically to learn together, share ideas, support each other and solve mutual problems. Attendance at these sessions will be voluntary and non-evaluative. The group will continue meeting as long as it is beneficial to those involved.

We have selected a few topics, but you can also suggest further topics of interest to you. We will disseminate these new ideas as we get them to foster the organization of groups.

If you are interested in joining one of these groups, or have a suggestion for another group, please e-mail Phyllis Blumberg, at p.blumbe@usip.edu. If you have previously signed up for a group, you do not need to do so again.

Once enough people sign up for a specific topic, we will arrange a mutually convenient time for the first meeting.

Possible educational special interest groups include:

- Assessing students in non-cognitive domains
- Coming up for pre-tenure review; developing an educational/ teaching portfolio
- Disseminating your educational innovations in professional meetings and journals
- Developing a faculty peer review process of teaching efforts
- Getting started in or doing educational research
- Promoting active learning with your students
- Young, female and a faculty member: special concerns

For more information or questions, contact Phyllis Blumberg x1167 or email her. ☛

OVERVIEW OF SEPTEMBER T⁵

TABLE TALK: TEACHING TIPS AND TECHNIQUES

ALTERNATIVES TO THE 50 MINUTE LECTURES

Discussants: Phyllis Blumberg, Joseph Lambert, Ray Orzechowski, Bill Reinsmith and Gail Webster

Some Key Points that were touched upon during the discussion:

- Students can concentrate on a lecture for only about 20 minutes
- The 50 minute time can be broken into several activities including shorter lectures, small group exercises, students working on a problem, asking questions, or answering questions
- Prepare students for changes from what they expect in the way class is structured
- Small groups are possible even within our large lecture halls
- When the faculty member is quiet, students will be more inclined to talk. Students need to be in an accepting environment, without the faculty member giving all the information.
- Within small groups, students can answer questions that can be marked and counted toward their grade
- Consistency in the way a course is taught is important for team taught courses
- Periods of reflection on the lecture, such as asking students to write what was the most important point just made, or answering questions promote student learning and retention
- Once students come to expect alternatives to the 50 minute lecture, they are more accepting of being asked to learn actively and participate c

OVERVIEW OF SEPTEMBER T⁴

TABLE TALK: TEACHING AND TECHNOLOGY

USING ELECTRONIC MEDIA TO FOSTER CREATIVE TEACHING

Discussants: John Connors, Allison Mostrom, Cathy Poon, John Porter and Jacquie Smith

Some Key Points that were touched upon during the discussion:

- Corel or Powerpoint presentations are very useful for showing students large and complex sequences of events such as a cell death cascade. These sequential overheads can show the relationships and connections of these events. Students learn the concept of a cascade without having to memorize every detail in the process.
- Publishing companies have developed Web sites to further explain material in their textbooks. These Web sites can be used to show recent developments in the field. Some times these developments were not mentioned in the textbook. The faculty member should preview these sites and can illustrate the most useful ones in class.
- Electronic media can be very useful to off campus or flex students. Class notes can be posted on ERes.
- A chat room can be used to help keep the dialogue alive between classes.
- The instructor can e-mail students individually to give them feedback on written assignments or presentations.
- Pictures can be scanned in and then shown to the class.
- Student responses to questions posed in class can be put into the computer and then posted so students can hear and read the responses.
- Cyberexams can be useful for self-assessments. Since individual grades are recorded, the instructor can monitor the student's progress during the semester.
- Students can be given several Web sites. Their charge is to critically evaluate the site. This led to an interesting discussion on criteria for how sites can be evaluated.
- The following Web Sites contain many useful tools for educators including criteria for evaluating Web sites.

<http://school.discovery.com/schrockguide/eval.html>

<http://hitiweb.mitretek.org/docs/criteria.html>

<http://libweb.uoregon.edu/subjguid/psychology/evaluate.html>

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EDUCATIONAL CONFERENCES OF NOTE

FULL BROCHURES CAN BE FOUND IN THE TEACHING AND LEARNING CENTER.

IDEA Seminar: Rethinking the Learning/Teaching Process
October, 6-8, 1999, sponsored by Kansas State University, Baltimore, MD
(758) 532-5569

**Annual Teaching/Learning Conference
Innovations for Student Success**
October 8-10, 1999, Ashland, KY

Dr. Lois Peck will present "Meeting the Challenge of Underprepared Students: Strategies for Improved Learning" on October 8th

To address the challenge of the underprepared student, this conference session was designed to present a variety of methodologies that professors might use to help students' cognitive development. Models of a variety of strategies will be presented. Strategies to help students overcome the memorization cycle, to help them become more efficient learners and to help them gain confidence in their ability to be a successful college student

**24th Annual Professional and Organizational Development
Conference
Pathways Through The Field**
October 13-17, 1999, Lake Harmony, PA

Dr. Phyllis Blumberg and Dr. Sheella Mierson from Creative Learning Solutions will present "Problem Based Learning: Developing Critical Thinking Skills" on October 14, 1999

Problem Based Learning (PBL) is an instructional method that helps students think critically learn how to learn, and acquire team-building and communication skills. Workshop participants will experience PBL from the students' perspective by working on a problem in small groups. The presenters will discuss applications to a variety of disciplines and teaching environments.

**The Distance Learning Workshop
Essential Skills for Quality World Wide Web and Interactive
Television Programs and Courses**
November 11 -12, 1999, Albuquerque, NM

**Association for the Study of Higher Education
24h Annual conference**
November 18-21, 1999, San Antonio, TX

**Lilly Conference on College and University Teaching and
Learning**
Miami University and International Alliance of Teacher Scholars
November 18-21, 1999, Oxford, OH (800) 718-4287

Women Leading Change: Policies, Risks and Rewards
PACE - The Network
November 14-15, 1999, Hershey, Pennsylvania

**How Learning Happens: Making Connections, Constructing
Knowledge, Building Communities**
Collaboration for the Advancement of College Teaching and Learning,
November 19-20, 1999, Bloomington, Minn., (651) 690-6333

IF YOU WOULD LIKE YOUR PRESENTATION HIGHLIGHTED IN TEACHING MATTERS, PLEASE SEND AN ABSTRACT OF THE PRESENTATION TO THE TEACHING AND LEARNING CENTER.

PBS Adult Learning Service is offering satellite conferences on distance learning. You can find a complete list of the conferences on <http://www.pbs.org/als>. You can attend these conferences at the WHY? Studios, 150 North Sixth Street, Philadelphia

Exemplary Models for Web-Based Learning
Tuesday, October 7, 1999, 1:30 -3:30 PM Live

**Accountability in Higher Education: What it Means for
Colleges & Universities**
Wednesday, November 10, 1999 2-4 pm, Live

**Higher Education 2000: What will be New? What Will
Be Different?**

Contact: Oswald Ratteray, Commission on Higher Education, 3624 Market Street, Philadelphia or oratteray@msache.org
December 6-7, 1999, Washington D.C. €

GRANT MONEY AVAILABLE FOR TRAVEL & INSTRUCTIONAL TECHNOLOGY

As in the past, up to \$400 per individual will continue to be available for attendance at a conference, that focuses on teaching and learning.

In addition, you can now apply for a grant of up to \$400 towards the costs of learning about or integrating technology into your courses. The money need not be spent at conferences. Grant money can also be spent on software or other technology to be used by students.

Application Procedures

Please send a one to two page letter of application to Phyllis Blumberg, Director of the Teaching and Learning Center, describing each of the following points. 1) The activity or resource that you wish considered for funding. Include detailed information, attaching relevant brochures. 2) The specific ways in which this activity or resource will enhance the teaching and learning process in your course(s). Priority will be given to those applications that show a potential for incorporating technology in a way that changes how students learn. 3) Cost of the resource or detailed anticipated budget for the activity, including travel expenses, if applicable. 4) Specific plans for sharing with members of your department or other USP faculty members the ideas and/or information that result from your participation in this activity.

Grant applications will be reviewed by the Teaching and Learning Center Advisory Committee, composed of your colleagues from across the University. Awards will be made on a rolling basis in accordance with the fiscal year cycle. €

NEW RESOURCES AVAILABLE IN THE T&LC COLLECTION

Student Assessment-as-Learning, Author: Alverno College Faculty. A process, integral to learning, that involves observation and judgment of each student's performance on the basis of explicit criteria, with resulting feedback to the student.

Successful Service-Learning Programs, Editor E. Zlotkowski. Experienced leaders share how they have championed successful service-learning programs that have enriched their campuses and renewed their communities.

First Order Principles for College Teachers: Ten Basic Ways to Improve the Teaching Process, Author: Robert Boice. Ten basic principles that together form a foundation for effective teaching. Practicing these empirically tested principles can bring faster success to classroom performances, can generalize to other tasks.

The Knowledge Web: Learning and Collaborating on the Net, Editors: M. Eisenstadt & T. Vincent, of the Knowledge Media Institute. The Knowledge Web provides a guide to the educational possibilities offered by "knowledge media". Learning Media, Collaboration and Presence, Knowledge Systems on the Web. For an overview visit the editors' web site at <http://kmi.open.ac.uk>

Internet Based Learning: An Introduction and Framework for Higher Education and Business, Editors: D. French, C. Hale, C. Johnson and G. Farr. This book is designed for faculty who wish to integrate new Internet technology for learning. This book is for every educator who wants to use the Internet's instructional opportunities even if his or her personal computer skills are limited.

The Professional Development of Graduate Teaching Assistants, Editors: M. Marincovich, J. Prostko, & F. Stout. This comprehensive TA training handbook is an essential resource for those who prepare graduate TAs for their responsibilities in the classroom and for their overall professional development.

How to Write and Use Instructional Objectives, Author: Norman E. Grunland. This book is a practical guide for writing instructional objectives a practical companion for your period of research.

Developing The Capable Practitioner, Editors: Dave O'Reilly, Lynne Cunningham and Stan Lester. This book strives to assist higher education professionals in the realization of Dearing's aims by promoting individual responsibility for learning and demonstrating innovative teaching and learning strategies.

Learning Contracts, Editors: Geoff Anderson, David Bud and Jane Samson. This step-by-step guide introduces learning contracts to those considering using them on their courses. Equally, teachers familiar with learning contracts should find the models helpful in developing further ways to employ this approach to organizing learning.

The Course Syllabus: A Learning Centered Approach, Author: Judith Grunt. This book presents why and how to construct a syllabus that shifts from what you will cover to one that reflects what tools and information you can provide students to help them learn. The book's goal is to assist anyone interested in designing a learning-centered syllabus to plan and construct one.

The New Professor's Handbook: A Guide to Teaching and Research in Engineering and Science, Authors: Susan A. Ambrose and Cliff I Davidson. This book's goal is to communicate things known about the skills of teaching and research that will help persons beginning academic careers to improve their skills.

Linking America's Schools and Colleges, Guide to Partnerships & National Directory, Editors: F. P. Wilbur & L. M. Lambert. This valuable guide provides detailed information on more than 2,300 school-college-university partnerships. The book is divided into five parts, each with an introduction and selection of abstracts from 1,100 representative programs.

Teaching At Its Best, Author: Linda B. Nilson. This practical array of teaching options and current innovations is a particularly useful resource for any teacher, novice or experienced, who is looking for very accessible ways to present material more effectively.

500 Tips for Research Students, Editors: Sally Brown, Liz McDowell and Phil Race help you to identify your reasons for doing research, anticipate the problems you are likely to face, and provide advice on how to organize your work most effectively.

**All faculty may borrow any or our resources.
Many other titles are also available. ☺**

EXAMPLES OF LEARNER-CENTERED APPROACHES:

Active learning: Students may be engaged in a variety of learning tasks: responding to their reading, answering questions, writing, reporting to each other, solving problems, interacting collaboratively with peers and professors in discussions, reflecting on these experiences. Sustained, diverse and appropriate active involvement in learning facilitates greater ability to apply the content to new situations and fosters the development of the higher order thinking tasks such as synthesis, analysis, or evaluation. When students are engaged in active learning, they perceive they have a more meaningful learning experience, and in some cases actually learn more than students in conventional, more passive, learning situations.

Interactional learning: Learning within a social context features active group construction of knowledge. These opportunities allow students to observe how other students learn, and model from successful practices. Learning within a social context provides ways to help the students learn various perspectives, and form meaningful associations with knowledge. In social learning experiences, group members share responsibility for the final product. This type of environment fosters cooperation instead of competition. Common examples include peer teaching, group projects, collaborative learning, and learning communities.

Culture for total learning: A culture for total learning includes active involvement in academic and non-academic activities of the university. Frequent, and informal (can be out of class) contact between students and faculty helps foster student development and academic attainment. All components of student life including extra-curricular activities can promote learning.

Service-learning: Service learning often helps students to see the relevance of what they are learning and helps them to gain professional behaviors in the early years of their higher education. This type of experience-based learning may be particularly useful for students from traditionally disadvantaged groups. Learning that promotes an awareness of the students' social conscience, or offers possibilities for social transformation through action may help to promote discipline-based or content learning.

Small group learning: A recent meta-analysis of the research literature on undergraduate SMET (science, mathematics, engineering and technology, which includes allied health) courses demonstrates that various forms of small-group learning are effective in promoting greater academic achievement, more favorable attitudes toward learning, and increased persistence through SMET courses and programs. These general effects suggest that some small group work is more effective than purely lecture-based instruction in the introductory courses for intended SMET majors. Small groups can be formed within large lecture halls. The positive effects of small group learning were significantly greater for members of underrepresented groups (Springer, Stanne & Donovan, 1999).

Learner-centered approaches often encourage critical thinking, problem solving, interpersonal, and communication skills. These are the fundamental skills that Americans attribute to a university or college education, as well as are required for leadership. The Teaching and Learning Center strives to help faculty to educate and prepare students for leadership roles in industry, academia and healthcare. We will be happy to work with you to implement some of these suggestions. Together we can create a culture where all of us will greater achieve our educational goals.

We welcome your comments and feedback.

For further reading, all of the following are available in our Teaching and Learning center resource collection.

Biggs, J. *Assessment: An integral Part of the Teaching System.* *AAHE Bulletin.* 1999, 51(9), 10-12.

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