

# Teaching Matters

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

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## A Model for Integration of Content Concepts and Context Within Separate Courses: Making Explicit the Connections Among Disciplines

Phyllis Blumberg, Amy Kimchuk, Alison Mostrom, and Barbara Bendl Reilly

Many undergraduate students, particularly in the first two years, question why they have to take courses outside their intended majors or have trouble seeing the relevance of these disciplines to their future careers. Students tend to see each course as a separate entity with no connections to other courses. To help students see the relevance of specific skills or disciplines, there have been large national initiatives to increase integration of subjects. For example, in the mid- 1990's the National Science Foundation funded a multimillion dollar initiative, "Mathematics and its applications throughout the curriculum". Seven institutions received large grants to integrate mathematics with engineering, physical and biological sciences, or the humanities. These institutions have developed interdisciplinary courses, modules, or educational materials. Now this phase of the NSF-funded work is concerned with dissemination of the materials they developed. Four faculty from USP (the authors) attended a week long workshop that showcased the work done by several universities integrating mathematics and biology. These faculty are adapting what they learned from this conference for implementation at USP. We are proposing a model for integration that we think should work on this campus.

### Rationale and purposes for this model at USP

This model seeks to improve teaching and learning at USP by integrating various disciplinary perspectives into teaching a specific discipline. Eventually this model has the potential for content integration that can be applied throughout the entire USP educational programs. It integrates content of two or more disciplines while maintaining these courses as separate entities. Eventually, it should involve most of the faculty learning about other disciplines and integrating what is taught in one discipline with another. Advantages of this model include: making teaching collaborative, in content, method, and context; involving the majority of the faculty without totally revising the curriculum; teaching faculty something about other disciplines; and potentially invigorating teaching. *(continued on pg.2)*

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**USP Teaching and Learning Center Calendar of Events**

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 web page is open at [www.usip.edu/teaching](http://www.usip.edu/teaching)**

Find information concerning USP's Teaching and Learning Center Events and Services. Links include: [Calendar of TLC Events](#), [Special Interest Groups](#), [Travel and Technology Grants](#), [Summaries of Previous Events](#), [Workshops Available](#), and [Teaching Matters Newsletter](#).<sup>3/4</sup>

## A Model for Integration of Content Concepts and Context Within Separate Courses: Making Explicit the Connections Among Disciplines (*continued from pg. 1*)

The goal of this model is to make explicit the connections among disciplines in order to improve the students' learning of these disciplines.

The following objectives relate to this goal:

- Foster an appreciation in students of the relevance of the various disciplines, i.e., math, natural sciences, humanities, social sciences, etc., in day-to-day life
- Foster an appreciation in students of the relevance of various disciplines in the preparation for their careers
- Increase the comfort level with math, natural and social sciences, English, humanities
- Increase students' ability to use skills, such as analytical and numerical skills, that are taught in a variety of disciplines to solve real world and professional problems
- Enable students to ask intelligent questions that can be answered with other disciplines
- Facilitate the ability to solve a problem using multidisciplinary approaches

### Description of the model

The two main components of this model are a dialogue process among faculty from different departments and the identification or development of specific cross-disciplinary examples that can be used in the teaching of both disciplines. While we use two disciplines throughout this article to concretely illustrate the expected results of these two components, other disciplines are also appropriate. The dialogue process will help faculty reexamine the content, context, and timing of the material covered so that students will better appreciate the relationships among disciplines and better apply skills or content learned in one course to other courses. For example, as a result of the dialogue component of this model, the biology faculty will have a better idea of what math their students are learning and will be able to reinforce these math concepts in their own courses. Through dialogue with the faculty teaching biology, the math faculty will learn what math content the biological sciences faculty would like their students to be able to apply in the biology course. The math faculty will discover how the content will be used, when it is needed to be taught, how notation is used, and the appropriate unit of analysis.

As a result of these dialogues, faculty will have a list of topics that are covered in biology and mathematics. Next biology and mathematics faculty will review, identify, or develop educational examples and materials for use by instructors in their undergraduate courses. The aim of these examples is to help students to see the relevance of one discipline in their other studies and to help them learn to apply concepts in an interdisciplinary manner. These examples should be functional in both classes, i.e., suitable for introducing a concept in one discipline and using it in the other discipline or visa versa. With the incorporation of these examples into the regular course work of biology and math, hopefully the students will have

a better appreciation of how math is used in biology. The ultimate success of this model will be the development of faculty habits to think about their discipline and how they teach it in truly interdisciplinary ways.

### Implementation

Implementation can occur in several phases. The first phase concerns the integration of two disciplines, mathematics and biology. While this model can work with most disciplines and at all levels of courses, we want to pilot the implementation with two first year required courses, mathematical analysis and general biology, in a limited number of sections of each course. After the initial pilot, we propose to implement the process with all sections of general biology and all sections of mathematical analysis. The second phase of implementation involves other disciplines in the core curriculum. For example, faculty from math, biology, chemistry, humanities, or social sciences can begin a dialogue with faculty from other first or second year disciplines. Then we propose to implement this integration model in the other departments (phase 3) especially the health professional programs or upper level science courses. Different working groups will be formed for the integration of different disciplines. The Teaching Learning Center will facilitate these dialogues and assist in the implementation of examples from other disciplines.

We welcome your comments on this model and invite you to join us in the dialogue process. ¶

### Special Interest Groups

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. Currently we are running or proposing to run the following special interest groups:

- Active Learning
- Developing a Teaching Portfolio for pre-tenure review
- Developing Faculty Peer Review of the teaching process
- Capstone Courses
- Problem Based Learning
- Multiple Intelligences

If you are interested in joining one of these groups, or have a suggestion for another group, please contact the center. If you have previously signed up for a group, you do not need to do so again. ¶

April 2000

How are on-line courses  
different from live courses.  
Jacquie Smith and Lili Fox Velez

**Web-Based Courses require four types of support,**  
**1)**distribution of course materials; **2)** access to materials  
and related resources; **3)** dialoguing, between faculty and  
students, among students and between students and  
resource; and **4)** management and assessment process.

**Questions to consider prior to developing on-line  
courses.** What kinds of content work well? What content  
may not be appropriate? What level of course may be  
appropriate? Which students are best suited for this? How  
do you develop relationships with the class? Is the class  
entity going to be replaced with a lot of individuals? How  
can you achieve a class community? How can students  
learn to be more independent? How can you handle 25-  
30, or more students in this environment?

**Creating and sustaining online communities requires  
interaction, collaboration cooperation and a sense of  
community.**

#### Interaction Activities

- Begin by requiring interaction between 2 peers
- Give plenty of time (i.e. one week) to allow for scheduling difficulties

#### Bottom Line

An online community does not "just happen". It must be  
diligently planned and requires commitment from the class  
and especially from the faculty member. ;

September 200

New ERes  
Course Document Management System  
Mazen Khoury from Docutech

- Nicole Duncan-Kinard is developing a new handout explaining how to use ERes
- Version 4 was demonstrated (Version 3 was used in 1999-2000)
- Documents can be put on the ERes system, password protected or archived to be available for future use or for a specific time period
- Documents can be imported 3 ways
  - Type or Scan
  - Fax
  - Browse local machine, find document and insert, can stay in the same format
- Documents can be downloaded in any form
  - link URL
  - Audio
  - Video
  - Text
- Discussion bulletin board can direct discussion to specific topics, follow entire discussion on this topic
- Chat rooms are live, cannot be archived, but all discussion from chat can be printed.
- All journals that the library receives electronically can be downloaded on ERes files
- We will have 2 ways to access ERes using new service
  - From on-campus through the University website
  - From off-campus through campus access
- Creating a course page -
  - Very user friendly, just follow directions given.
  - Specific help information provided along with each section. ;

### Grant Money Available for Travel, Instructional Technology and Innovations

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

#### Application Procedures

Please send, as both hard copy and electronically, to Phyllis Blumberg, [p.blumbe@usip.edu](mailto:p.blumbe@usip.edu), a one to two page letter of application 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. 5) Please include your status in the department concerning tenure; non-tenure faculty on tenure-track appointment, faculty not on tenure track appointment or tenured faculty. 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. ;

April 2000

### Use of Assessment Data

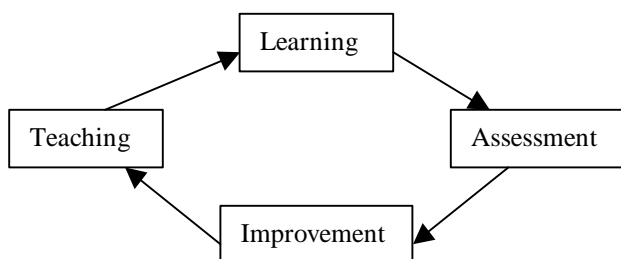
Eric Boyce

The fundamental goal of higher education is to improve the abilities (knowledge, skills and attitudes/behaviors) of students. Assessment data can assist with this.

#### General Assumptions of Assessment Activities

- Assessment should be an ongoing, prospectively planned, efficient activity.
- The most important outcomes and/or goals of a program need to be assessed.
- Students, alumni, faculty, student service staff, and administrators all have a role in assessment activities.
- Assessment is not an evaluation of an individual student, instructor or course. Assessment is of whole program.
- Data should come from a variety of sources and be collected in a fair, unbiased manner.
- Both formative (developmental) and summative (at the end of the program) assessment data should be collected and used.
- Assessment data need to be disseminated to all appropriate individuals
- Assessment data should analyzed and used to make decisions in academic and student services programs.
- The assessment plan also needs to be assessed routinely.

#### The Teaching Improvement Loop



From the Framework for Outcomes Assessment, Middle States Commission on Higher Education

For further reading see [www.aahe.org/principi.htm](http://www.aahe.org/principi.htm);

August 2000

### How can the successful innovation that won the 2000 Patricia Leahy "OWL" Award be adapted for other courses?

Annette Iglarsh

- Requiring students to develop a portfolio of their work is a good technique for a capstone course.
- Projects students developed included a health fair, an in-service activity, reviews, etc.
- This portfolio was very helpful for students in their job interview process.
- Contract grading requires the students to decide what grade they will get by the number of assignments or projects they will do.
- If students contract for their grades, work is either acceptable or not acceptable (needs to be redone or not counted).
- Students can do more work to get a higher grade than originally contracted for, but not less work and get a lower grade.
- Need to spend time talking about expectations, requirements.
- Assignments need to be very clearly described.
- Tell other faculty, especially in the same department, about the course and its expectations - they might hear about it as complaints from students.
- Students can hand in their projects 1 week in advance of deadline for feedback.
- For a capstone course, all materials were due at the end of the semester; students did not always budget their time well.
- Students requested that they carry over the completion of their projects past the semester. This year the students will get 1 credit hour in the spring, with most of the credits being assigned in the fall semester.
- Students worked harder for this course, complained as they were going through it and then saw how helpful it was later on.
- Now that students know this portfolio is coming as a capstone course, they are beginning to think about preparing it as they go through the program.
- The second time this course is being run is going much smoother than the first time. There are far fewer student complaints. ;

## Respecting Student Diversity

Miriam Diaz-Gilbert

*"The secret of successful educating is respecting the student." - Ralph Waldo Emerson*

Who are our students? They are our livelihood. They come in all sizes, shapes and colors. We often do not see the value of student diversity or why we need to value and respect it.

How can educators begin to understand why diversity is an asset and not a liability? How can educators learn to respect and value student diversity? Taking these steps will be very helpful.

- Develop a sense of self-identity
- Recognize and acknowledge your attitude, biases and stereotypes
- Don't base your expectations of your students on race, ethnicity, gender, sexual orientation, class, age, disability, etc.
- Treat each student as an individual. Don't lump them into groups based on race, ethnicity, language barrier, gender, etc.
- Develop 'cultural competence'. Take the time out to learn and read as much as you can about your student's culture, life experiences, etc. through books, cultural events and other available resources.
- Understand and recognize your student's identity, history and its history to the dominant culture
- Remove the word '*minority*' from your vocabulary to refer to groups of people. There is nothing minor about a human being. The term '*minority*' is demeaning and dehumanizing
- Remove the following obstacles: ethnocentrism, discrimination, stereotyping, cultural blindness, racism and cultural imposition
- Take the time out to learn from all of your students. Students have as much to teach educators as educators have to teach students
- Speak up against incidences of stereotyping, bias, sexism, discrimination, bigotry, etc.
- Check out the following resources:
  1. "Diversity and Complexity in the Classroom: Consideration of Race, Ethnicity and Gender." Tips for Teaching. [www.uga.berkeley.edu/sled/bgd/diversity.html](http://www.uga.berkeley.edu/sled/bgd/diversity.html)
  2. Diversity in the Classroom: Teaching for Inclusion. 1998. The Center for Teaching and Learning. University of North Carolina - Chapel Hill. [www.unc.edu/depts/ctl](http://www.unc.edu/depts/ctl)
  3. Elmore, Christina. "Strategies for Teaching the Value of Diversity". Student Diversity and Its Contribution to Their Learning, 1997. Vol. IV. Yale-New Haven Teachers Institute. [www.cis.yale.edu/ynhti/curriculum/units/1997](http://www.cis.yale.edu/ynhti/curriculum/units/1997) ;

## Writing Multiple Choice Items

Phyllis Blumberg

Multiple choice items contain two parts a stem and item alternatives.

### The Stem

- Should present a complete thought or question.
- The stem should identify a problem so that the student can read a set or parallel constructed alternatives with a clear purpose in mind.
- Avoid stems that ask for a series of multiple true-false responses.
- Eliminate excessive wording and irrelevant information.
- Try to avoid negatively worded stems. If you cannot think of a way of saying it in the affirmative, underline and/or capitalize the negative word.
- When using incomplete statements, avoid beginning with a blank space. Rewrite the sentence to put the blank at the end of the stem.

### Item Alternatives

- Make sure there is one, unquestionably correct or best response.
- Make all alternatives plausible and equally attractive to all of the students, regardless of their level of knowledge.
- Minimize the use of all of the above and none of the above alternatives.
- Make alternatives parallel in construction and consistent with the stem.
- When possible, present alternatives in some logical order.
- Make the alternative mutually exclusive.
- Randomly distribute the correct response among the alternative positions throughout the test, having about the same number of each letter as the correct answer.

Participants reviewed multiple choice items that they had previously developed, identified possible flaws and revised them. Then participants developed new items and shared them with the group. These items were discussed and improved. ;

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## OVERVIEWS OF PREVIOUS WORKSHOPS & PRESENTATIONS

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### Goals and Objectives

Phyllis Blumberg

The closer the relationship among objectives within a course, the teaching-learning activities, and the student assessment, the more effective learning experience will be for students.

Demonstrate a consistency among:

- The desired student outcomes
- The learning objectives for the course/program
- The instructional methods, or the teaching/learning activities
- The methods and outcomes evaluated in the assessment of the students
- The ways that all of these are communicated to the students and all faculty

Steps in developing course specific objectives.

- Each course goal should relate to 2-3 objectives.
  - When too many objectives are generated for a course, these objectives often concentrate too much on low level objectives such as memorizing or course can be seen as trivial.
  - When too many objectives are generated for a course, including higher level objectives, there probably is too much content required.
- Objectives should contain 3 basic elements
  - Verb that describes an observable action
  - Description of conditions under which action takes place, when given x, the student will be able to \_\_\_\_.
- Writing objectives
  - Prior to actually writing objectives: describe student for who objective is designed  
Prerequisites
  - Problems often are result of mismatch between students have designed course for and abilities/experiences of those enrolled.
  - Use clear concise words to describe student behavior in objectives.

Participants practiced writing objectives for a course and shared them. ;

### Becoming a Successful Graduate Student

Instructor Workshop Series

May 2000

#### The Importance of Consistency Among Lab Sections and With Your Own Lab Section

Participants read three scenarios and discussed them from the point of three different perspectives, separately. What are the implications on: 1) student learning and their education, 2) student assessment and evaluation, and 3) for you as an instructor?

After the three scenarios were discussed there was a general discussion on the importance of consistency and of empowerment as an instructor.

Graduate students progress from being senior learners who are worried about doing the job correctly, to being colleagues-in-training who distance themselves from students so that they can become analytical about learning relationships, to being junior colleagues who want to facilitate learning through their collaboration. ;

#### Patricia Leahy InnOvations With Learning

##### "OWL" Award Winner, 2000

Congratulations to **Z. Annette Iglarsh, Ph.D.** on her winning Innovation Titled "**PT 667 Political and Social Management, a capstone course in the final year of the professional phase of the Physical Therapy Curriculum.**" The innovative assignment, created for this course, guided the students to create continuing education programs, niche business plans for specialty physical therapy programs, clipping files, book reports, and a service activity. The class culminated in two ways. The first was the First Annual USP Health Fair held at the beginning of December at Wilson Hall. The second aspect of culminating activities were the portfolio presentations, which were presented in small groups of four or five students in a roundtable format. One of the most valuable things about the assignment for Annette was the empowerment she gave the students for self-determination of grades and activities.

##### 2001 Application

If you would like to be considered for a Patricia Leahy InnOvations With Learning "OWL" Award, please send a 1-2 page letter of application to Phyllis Blumberg. Submissions will be due during the spring semester. For information pertaining to who is eligible for an "OWL" Award and details on what is to be included in the letter please see the Center's web page at [www.usip.edu/teaching/owlaward.html](http://www.usip.edu/teaching/owlaward.html). ;

### Multiple Intelligences

Lois Peck

Participants considered each of the following 8 intelligences in terms of: currently utilizing strategies to develop intelligences, examples of learning activities used to develop understanding and new opportunities to teach each. The italics below are possible teaching-learning activities that facilitate the development of each of these intelligences.

**Linguistic** - Sensitivity to the sounds, structure, meanings, and functions of words and language. - *Brainstorming, written assignments, debates, speeches and media reports.*

**Logical- Mathematical** - Sensitivity to and capacity to discern logical or numerical patterns, and ability to handle long chains or reasoning - *Math, data analysis, logical sequencing of events, and problem-solving.*

**Spatial** - Capacity to perceive the visual/spatial world accurately and to perform transformations on one's initial perceptions - *Visual representations, graphs, geometric designs, diagrams, artistic displays, and sculptures*

**Bodily Kinesthetic** - Ability to control one's body and to handle objects skillfully - *Movement, dance, role plays, constructed mock-ups, building projects, and games.*

**Musical** - Ability to produce and appreciate rhythm, pitch, and timbre; appreciation of the forms of musical expression - *Vocal sound distinction, lyrics, musical composition, instrumental work, background music, and cultural distinction.*

**Interpersonal** - Capacity to discern and respond appropriately to the moods, temperaments, motivations, and desires - *Teamwork, intercultural projects, group problem solving, cooperative activities and pair sharing.*

**Intrapersonal** - Access to one's own feelings and the ability to discriminate among one's emotions; knowledge of one's own strengths/weaknesses - *Journaling, writing letters from the perspective of a famous politician, self-management, and moral judgement.*

**Naturalistic** - Sensitivity and adaptability to the environment - *Comparison among living things, and organized collections from the natural world. ;*

### Introduction to Problem-Based Learning

Phyllis Blumberg

#### What is Problem-based learning (PBL)?

- Students are active learners.
- Problem (or case) from professional practice becomes
  - Stimulus for learning ,
  - Basis for class discussions,
- Through case discussions students learn to apply concepts to real professional problems.
- Learning is intrinsically motivated because students identify what they need to learn.
- Process emphasizes learning.
  - How to learn.
  - How to apply knowledge to new situations.
- Learning can be integrated, with students learning more than one discipline at a time.
- Faculty roles within groups
  - Guides student learning
  - Facilitator of discussion
  - Not to directly instruct, may clarify points
  - Evaluate students.
- Students engage in
  - active discussions of cases (with or without a faculty facilitator present).
  - much independent or cooperative study between sessions.
- What distinguishes PBL graduates from others?
  - Well prepared for professional practice
  - Can integrate scientific principles into practice
  - Skillful in working with professional teams
  - Posses excellent communication skills
  - Can apply what they learned to new situations
  - Comfortable with leadership, active roles
  - Excellent collaborators
  - Effective time managers
  - Excellent self-directed learners
- Conclusion
  - PBL is active, professionally relevant way to learn.
  - Prepares graduates for professional practice.
    - Prepared in content
    - Prepared in process
    - PBL has been called practice simulation.

Participants experienced PBL as learners working through a case. ;

### Gaining Immediate Feedback on how well your students are learning: Classroom Assessment Techniques

Phyllis Blumberg

- Important to monitor learning throughout the semester, not just by way of tests - need continuous flow of information.
  - Helps faculty obtain useful feedback on what, how much, how well students are learning
  - With this knowledge, can refocus their teaching, help students make their learning more efficient, more effective.
- Classroom assessment techniques (CATs) - simple informal exercise that instructor uses during class to determine how well students are learning.
  - Instructor uses data from CATs to improve learning.
  - Share results with the class - when sharing occurs, students become more aware of how they think, learn
- Getting started using CATs
  - 3 steps in classroom assessment cycle
    - Plan - focus on 1 class
    - Implement
    - Respond
      - Next class let students know what you learned from their CAT answers
- Examples of CATs
  - The Minute Paper - category- discipline - specific knowledge, skills last 5-10 minutes of class
    - What was the most important point you learned this class?
    - What important question remains unanswered?
  - Application Cards
    - One real life or professional application of concept (Allow 3-5 minutes for write-up)
  - Categorizing Grid
    - Students given grid containing 2-3 important categories - students fill in details

Participants experienced several CATs and developed one of their own. ;

### Giving Students Constructive Feedback

Phyllis Blumberg

#### Principles for giving feedback

- Focus feedback on:
  - Behavior, not the person
  - Observations, not inferences
  - Description, not judgement
  - Descriptions of behaviors framed in terms of more or less, not either or.
  - Specific situations, not in abstract. Be concrete.
  - Sharing ideas, information, not giving advice.
  - Exploration of alternatives not answers.
  - Value it may have to recipient, not on value of "release" gives provider
  - Amount of information that person receiving it can use
  - Appropriate times, places for giving/receiving it
  - What, how when, where is said, not on why it is said.
- Negative feedback, if given properly, as constructive criticism, is more conducive to advancement than is positive feedback.
- If you give feedback, you must be willing to receive it.

Participants discussed implications and examples of each principle for giving feedback. ;

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### Advising Workshops

Suzanne Trump

#### Basics of Academic Advising

- Overview of academic advising at USP
- Expectations of academic advisors
- Registration process at USP
- Resources available

#### Innovations in Academic Advising

- Curriculum changes and additions
- Advising Center web page  
[www.usip.edu/advising/index.htm](http://www.usip.edu/advising/index.htm)
- Review of FERPA: Family Educational Rights and Privacy Act
- Undergraduate Grade Informing System
- Transfer issues
- Orientation ;

### Flashlight

Jacqueline Smith and Phyllis Blumberg

- The Flashlight program assists in the evaluation of the use of technology in education.
- The Flashlight Program provides tool kits, tools and a method for investigating the uses of technology in education.
- From TLT Group of AAHE
- Flashlight's premise is to answer the question, what kinds of data will enable educators to improve education by changing the ways technology is used?
- Employ strategic evaluation using studies of patterns of use, outcomes and problems extending over at least one course.

#### Picking a Problem

- Big enough to matter
- Big enough to justify the study.

#### Focus on the activity

- Did the educational activity cause the desired outcomes?  
(If not, why not?)
- Was the technology well-used for supporting this activity appropriate, vital, and efficient? (if not, why not?)

#### Triads are a way to plan the study.

##### TRIADS



- Focus on triads
- Focus on crucial choices about which you feel uncertain
- Involve as many people as possible in designing studies to answer their own questions.

<http://www.tltgroup.org/programs/flashlight.html>;

### Choosing the Right Technology To Meet Educational Goals and Objectives

Phyllis Blumberg and Jacquie Smith

Selecting the most effective teaching/learning activities to help students reach goals

- is not an easy task
- often requires a change in instruction where no technology or some technology is involved
- **focus on your goals and how best to reach them.**

Selecting the right technology

- already decided on general structure of course (large groups, lab, etc.)
  - Then choose technology that will help facilitate learning in this context.
- Considering how technology might affect nature and structure of unit or course itself
  - move dissemination of information to self-paced study through use of mixed media, thus having classroom time for other activities.

Technology Factors to consider in making decisions:

- what effects do you most want to gain by using technology
- make sure the equipment needed is available in the room scheduled.

Locating and evaluating existing materials

- Using commercially available materials almost always costs less in time and money than designing and producing new ones.

Summary Considerations

- Use whatever medium or combinations of media are appropriate for reaching each of the goals for your course.
- Most effective courses use different approaches, technology.
- Many alternative high or low technology options to meet same goal.

Syllabus [www.syllabus.com](http://www.syllabus.com);

Teaching Students to Think  
Suzanne Murphy, Robert A. Smith

Whether you are measuring percentages of leaf disks floating to demonstrate photosynthesis or the average heart rate per minute of *Daphnia* to demonstrate the influence of alcohol, one problem with data analysis is that a statistical test may indicate a significant difference during one class but no significant difference in another class. If this happens too frequently (i.e., greater than five to ten percent of the time), then how can you rely on the statistical test to help you make a decision about your data?

This session examined the use of a common statistical test, the student's t-test, for evaluating variation in multiple measurements. Students in an Introductory Biology class used measurements of sprangia diameters of two species of *Rhizopus* to explore the concepts of systematic and random error, sample size, significance level, power of the test, and Type I and Type II errors.

Participants learned how these factors can influence the outcome of the t-test. ;

Planning for Student Evaluations  
Phyllis Blumberg

Participants formulated an evaluation plan that is 1) based on current educational thinking (summarized below) and 2) consistent with their objectives for the course.

Testing what you want to be testing.

- Work from your objectives.
  - Objectives specify what is to be learned, level of learning, how students will demonstrate competence.
  - Objectives should lead to test plan or blue print.
  - Remember the principle of consistency among objectives, teaching learning activities and student evaluation

What is the purpose of the evaluation?

- Norm-referenced vs. criterion referenced testing.
- Norm-referenced evaluation
  - used to assign grades on the basis of comparing student performance.
  - makes sense for national tests, scored by comparing student with a national norm, results are expressed as percentile
  - limited number of students who can receive an A, or an F on a norm-referenced test
- Criterion-referenced testing
  - measures student performance based on standards, such as successfully meeting course objectives
  - Criterion-referenced testing is especially useful when it is important to determine whether students have acquired the necessary knowledge to move on to the next level of difficulty.
  - Criterion-referenced tests are excellent at determining student weaknesses, strengths.
  - Potentially all students can demonstrate proficiency, many students can receive top grades

Developing a test blueprint - table of item specifications.

	Major content domains - follow from objectives - are Placed in column headings			
Level of Learning				
Knowledge				
Application				
Analysis				
Evaluation				

Participants used their objectives to make a test blueprint. ;

Congratulations to the 1999-2000 Faculty Awardees

The **Faculty Special Recognition Award** was awarded to **Kenneth Leibowitz**, Assistant Professor of Communications. The process for deciding on this award has been for the chairs and academic deans to select candidates from among all full-time faculty who were ranked "outstanding" in the "overall" AFE category.

The **William F. Homiller Award** for outstanding teaching was established by a generous endowment gift from Walter J. Glenn and awarded to **Kevin Wolbach**, Instructor in Biology, by the faculty.

The **Lindback Foundation Award** for distinguished teaching was awarded to **Anil D'mello**, Associate Professor of Pharmaceutics and is awarded to the recipient by a committee comprised both of students and faculty.

The **Technology Award** was received by the **Physical Therapy Department** in the Creation of Curriculum Database and is given by the Vice President for Academic Affairs to encourage the development of technology-based teaching and learning strategies.

The **Faculty Academic Advisor of the Year Award** recognized the contribution of **Robert Morgan**, Chair and Associate Professor of Physical Education. ;

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## EDUCATIONAL CONFERENCES OF NOTE

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FULL BROCHURES CAN BE FOUND IN THE TEACHING AND LEARNING CENTER

### OCTOBER

**DEVELOPING A COMPREHENSIVE FACULTY EVALUATION SYSTEM**, OCTOBER 9<sup>TH</sup> AND 10<sup>TH</sup> MARRIOTT HOTEL, LA JOLLA, SAN DIEGO, CA, FULL BROCHURE ON DISPLAY

**INNOVATIONS FOR LEARNING ENHANCEMENT**, OCTOBER 13<sup>TH</sup> AND 14<sup>TH</sup>, ANNUAL TEACHING AND LEARNING CONFERENCE 2000, ASHLAND PLAZA HOTEL, KY MULTIPLE INTELLIGENCES: MULTIPLE CONNECTIONS ONLINE REGISTRATION AT [WWW.TLC.ASHLANDCC.ORG](http://WWW.TLC.ASHLANDCC.ORG)

**IDEA SEMINAR: ACTIVE LEARNING: INVOLVING STUDENTS EFFECTIVELY IN THE CLASSROOM**, OCTOBER 29<sup>TH</sup> - 31<sup>ST</sup>, CLARION BAY VIEW HOTEL SAN DIEGO CALIFORNIA, FULL BROCHURE ON DISPLAY.

**PBL 2000: A CONFERENCE ON PROBLEM-BASED LEARNING IN UNDERGRADUATE AND PROFESSIONAL EDUCATION**, OCTOBER 29<sup>TH</sup> - 31<sup>ST</sup>, SHERATON BIRMINGHAM, AL, PRECONFERENCE WORKSHOPS IN SPECIALIZATION AREAS; PHARMACY, ARTS & SCIENCES INCLUDING SCIENCE AND TECHNOLOGY, HUMANITIES AND SOCIAL SCIENCE AND COMMUNITY BASED PROGRAMS. CONFERENCE REGISTRATION FORMS MAY BE SUBMITTED ON LINE AT [WWW.YOURMEETING.COM/PBL](http://WWW.YOURMEETING.COM/PBL)

### NOVEMBER

**NAVIGATING CHANGING CURRENTS IN THE UNDERGRADUATE EXPERIENCE**, NOVEMBER 1<sup>ST</sup> - 4<sup>TH</sup> CINCINNATI, OH, SPONSORED BY THE NATIONAL RESOURCE CENTER FOR THE FIRST YEAR EXPERIENCE & STUDENTS IN TRANSITION UNIVERSITY OF SOUTH CAROLINA, [WWW.SC.EDU/FYE](http://WWW.SC.EDU/FYE)

**THE 2000 ASSESSMENT INSTITUTE**, IN INDIANAPOLIS, NOVEMBER 5<sup>TH</sup> - 7<sup>TH</sup>, IN-DEPTH LEARNING OPPORTUNITIES WITH SCHOLARS/PRACTITIONERS FOR FACULTY AND ADMINISTRATORS WITH SPECIAL SESSIONS FOR HEALTH PROFESSIONS EDUCATORS AND STUDENT AFFAIRS PROFESSIONALS [WWW.PLANNING.IUPUI.EDU](http://WWW.PLANNING.IUPUI.EDU)

**THE FIFTH ANNUAL CONFERENCE ON LEARNING COMMUNITIES AND COLLABORATION, LEARNING COMMUNITIES: HERE, THERE, AND EVERYWHERE**, BAVARIAN INN LODGE, FRANKENMUTH, MICHIGAN, NOVEMBER 15<sup>TH</sup> - 17<sup>TH</sup>, SPONSORED BY: WILLIAM RAINEY HARPER COLLEGE AND DELTA COLLEGE, [WWW.DELTA.EDU/~LCC](http://WWW.DELTA.EDU/~LCC)

**THE 20<sup>TH</sup> ANNUAL LILLY CONFERENCE ON COLLEGE TEACHING**, MIAMI UNIVERSITY, MARCUM CONFERENCE CENTER, NOVEMBER 16<sup>TH</sup> - 19<sup>TH</sup>, [WWW.MUOHIO.EDU/LILLYCONFERENCE](http://WWW.MUOHIO.EDU/LILLYCONFERENCE) OR E-MAIL [LILLYCONFERENCE@MUOHIO.EDU](mailto:LILLYCONFERENCE@MUOHIO.EDU) OR PHONE (513) 529-6648

### FEBRUARY

**AAHE CONFERENCE OF FACULTY ROLES AND REWARDS**, FEBRUARY 1<sup>ST</sup> - 4<sup>TH</sup>, TAMPA, FLORIDA, [WWW.AAHE.ORG](http://WWW.AAHE.ORG)

**ACADEMIC CHAIRPERSONS CONFERENCE**, FEBRUARY 7<sup>TH</sup> - 9<sup>TH</sup> ADAMS MARK HOTEL, ORLANDO, HOSTED BY THE DIVISION OF CONTINUING EDUCATION KANSAS STATE UNIVERSITY [WWW.DCE.KSU.EDU/DCE/CONF/ACADEMICCHAIR](http://WWW.DCE.KSU.EDU/DCE/CONF/ACADEMICCHAIR);

**USP Teaching and Learning Center Schedule of Activities for Fall 2000**

Month	Date and Time	Place	Activity	Topic
August	August 21 <sup>st</sup> Monday From 4:00 - 5:00 pm	Chemistry Conference Room GH-140C	<i>T<sup>5</sup>: Table Talk Teaching and Technology</i>	<i>How can a successful innovation (using student portfolios, contracting for grades) be adapted?</i>
	August 28 <sup>th</sup> Monday From 4:00 - 5:00 pm	Chemistry Conference Room GH 140 C	<i>T<sup>5</sup>: Table Talk Teaching and Technology</i>	<i>How can a successful innovation (using student portfolios, contracting for grades) be adapted?</i>
September	September 5 <sup>th</sup> Tuesday From 12:00 -1:00 pm	Wilson Computer Center	<i>T<sup>4</sup>: Table Talk Teaching and Technology</i>	<i>New ERes - Course Document Management System</i>
	September 11 <sup>th</sup> Monday From 4:00 - 5:00 pm	Wilson Computer Center	<i>T<sup>4</sup>: Table Talk Teaching and Technology</i>	<i>New ERes - Course Document Management System</i>
	September 19 <sup>th</sup> Tuesday From 12:00 - 1:00 pm	Wilson Student Center Room 212	<i>T<sup>5</sup>: Table Talk Teaching Tips and Techniques</i>	<i>Planning Interdisciplinary or Team Taught Courses</i>
October	September 25 <sup>th</sup> Monday From 4:00 - 5:00 pm	Chemistry Conference Room, GH 140C	<i>T<sup>5</sup>: Table Talk Teaching Tips and Techniques</i>	<i>Planning Interdisciplinary or Team Taught Courses</i>
	October 2 <sup>nd</sup> Monday From 4:00 - 5:00 pm	Chemistry Conference Room, GH-140C	<i>T<sup>4</sup>: Table Talk Teaching and Technology</i>	<i>Supporting Learners in an Online Environment</i>
	October 10 <sup>th</sup> Tuesday From 12:00 - 1:00 pm	Wilson Student Center Room 212	<i>T<sup>4</sup>: Table Talk Teaching and Technology</i>	<i>Supporting Learners in an Online Environment</i>
	October 16 <sup>th</sup> Monday From 4:00 -5:00 pm	Chemistry Conference Room, GH-140C	<i>T<sup>5</sup>: Table Talk Teaching Tips and Techniques</i>	<i>A New USP Model for Integrating Content, Context Within Separate Courses</i>
	October 24 <sup>th</sup> Tuesday From 12:00 -1:00 pm	Wilson Student Center Room 212	<i>T<sup>5</sup>: Table Talk Teaching Tips and Techniques</i>	<i>A New USP Model for Integrating Content, Context Within Separate Courses</i>
	October 30 <sup>th</sup> Monday From 4:00 -5:00 pm	Chemistry Conference Room, GH-140C	<i>T<sup>4</sup>: Table Talk Teaching and Technology</i>	<i>Unseen Implications of Electronic Age: How much material to give to students electronically</i>
November	November 7 <sup>th</sup> Tuesday From 12:00 -1:00 pm	Women's Club Room Whitecar Hall	<i>T<sup>4</sup>: Table Talk Teaching and Technology</i>	<i>Unseen Implications of Electronic Age: How much material to give to students electronically</i>
	November 13 <sup>th</sup> Monday From 4:00 - 5:00 pm	Learning Resource Center	<i>T<sup>5</sup>: Table Talk Teaching Tips and Techniques</i>	<i>Using the New AV Electronic Equipment</i>
	November 21 <sup>st</sup> Tuesday From 12:00 - 1:00 pm	Women's Club Room Whitecar Hall	<i>T<sup>5</sup>: Table Talk Teaching Tips and Techniques</i>	<i>Creating and Giving Useful Library Assignments</i>
	November 27 <sup>th</sup> Monday From 4:00 -5:00 pm	Women's Club Room Whitecar Hall	<i>T<sup>5</sup>: Table Talk Teaching Tips and Techniques</i>	<i>Models of Service Learning Programs</i>

Please, find  
December  
events on  
the following  
page. ↓

**USP Teaching and Learning Center Schedule of Activities for Fall 2000**

<b>Month</b>	<b>Date and Time</b>	<b>Place</b>	<b>Activity</b>	<b>Topic</b>
<b>December</b>	December 5 <sup>th</sup> Tuesday From 12:00 - 1:00 pm	Learning Resource Center	<i>T<sup>d</sup>: Table Talk Teaching and Technology</i>	<i>Using the New AV Electronic Equipment</i>
	December 11 <sup>th</sup> Monday From 4:00 -5:00 pm	Chemistry Conference Room, GH-140C	<i>T<sup>d</sup>: Table Talk Teaching and Technology</i>	<i>Creating and Giving Useful Library Assignments</i>
	December 19 <sup>th</sup> Tuesday From 12:00 -1:00 pm	Women's Club Room Whitecar Hall	<i>T<sup>d</sup>: Table Talk Teaching Tips and Techniques</i>	<i>Models of Service Learning</i>