



# Teaching at USMA

Vol. 9 No. 7

Center for Teaching Excellence

February 2004

<http://www-internal.dean.usma.edu/centers/cte>

## Deep” and “Surface” Learning

Since the original empirical research in 1976, there has been increasing attention to the differences between what is termed “deep” and “surface” learning. Before discussing these types, it is important to note what they are *not*:

Although learners may be classified as “deep” or “surface,” **these are not attributes of individuals**; they are approaches used by the individual in a learning situation. In fact, one person may use both approaches at different times, although that individual may also have a preference for one or the other.

The approaches (deep or surface) correlate fairly closely with motivation; “deep” with intrinsic motivation and “surface” with extrinsic, but they are not the same thing. Either approach can be adopted by a person with either motivation.

The initial research study identified characteristics of “deep” and “surface” learning along with the factors that seem to foster such an orientation (*see table on page 2*). The surface learner is trying to “figure out” what the teacher wants and to provide it and is likely to be motivated primarily by fear of failure. Surface learning tends to be experienced as an uphill struggle, characterized by fighting against boredom and depressive feelings. Deep learning is may involve difficulty for the learner, but it is experienced as exciting and a gratifying challenge.

It is important to note that many students arrive at college as surface learners, having been “coached” by their high school teachers to get the grades they need for admission. Since this approach has worked for them, they see little need to change their orientation.

Ironically, an editorial in *USA Today* just a year ago pointed out that the surface learning seems to lead to “success” at most colleges and universities in the U.S at this time. In 2003, the Higher Education Research Institute (HERI) noted that entering college freshmen had the worst study habits measured in the fifteen years it has surveyed first-year students. Moreover, during the past thirty years, SAT cores of entering students have declined, and fully a third of freshmen are enrolled in at least one remedial reading, writing, or math course. Nevertheless, they are not working harder. The National Survey of Student Engagement

(NSSE) reveals that not even 15% of students come close to the ideal of spending two hours studying for every in-class hour. Yet in 2002, 50% of the grades at Harvard were either A or A-, compared with 22% in 1966. Half of Columbia University students are on the Dean’s List.

But while undergraduates are focused on grades (a characteristic of surface learners), assuming that high grades leads to better jobs and more pay, it has been shown that what actually correlates with success in life work is not grades but “engagement”—genuine involvement in courses and campus activities. Engagement leads to “deep learning” or learning for understanding, the type of learning that leads to the development of the individual. Thus, deep learning should not be seen as the exception but the goal for education. If we are truly interested in the development of students for success, both in the Army and in life in general, we should be trying to change an orientation to surface learning (what is known as “spec and dump”) to deep learning as the dominant focus.

Interestingly the orientation to surface learning has been related to one’s concept of what learning means.

### Conceptions of Learning

“Learning” means different things to different people. One interview-based study classified the conceptions of learning held by respondents into five categories:

*(Continued on page 2)*

#### *Also in this issue:*

**Page 3** CTE “Brown Bag” schedule

**Page 3** “Celebrating Teaching” tickets on sale!

**Page 4** Class preparation and Academic Integrity

# “Deep” and “Surface” Learning

(Continued from page 1)

1. Learning as a quantitative increase in knowledge. Learning is acquiring information or “knowing a lot.”
2. Learning as memorizing. Learning is storing information that can be reproduced.
3. Learning as acquiring facts, skills, and methods that can be retained and used as necessary.
4. Learning as making sense or abstracting meaning. Learning involves relating parts of the subject matter to each other and to the real world.
5. Learning as interpreting and understanding reality in a different way. Learning involves comprehending the world by re-interpreting knowledge.

There is a clear qualitative shift between conceptions 3 and 4. It has been argued that 1, 2, and 3 are views that underpin surface learning strategies, while 4 and 5 relate to deep learning. If we hold conceptions of learning that correlate with 1-3, then we may design courses that promote surface learning and conduct classes in a similar way, thus fostering surface learning.

## Promoting Deep Learning

Clearly, promoting deep learning must begin in an expectation that in \_\_\_\_ course, students will be asked to do more than simply store information and regurgitate it on examinations. However, since students may come to college as surface learners, there also must be some specific classroom practices that promote deep learning. Here are a few:

Designing courses for deep learning might include, among other features:

- Case studies to promote analysis, problem-solving, and evaluation
- Defending a position, possibly not one’s own
- Posing “higher –order” questions, especially
  - Why [analysis of cause] questions rather than *what* [recall of fact]
  - Picking the best answer out of possibilities offered [and defending that choice]
  - “How can we apply \_\_\_\_\_ in real life?”
  - Open-ended questions, including ethical dilemmas and “what if” questions
- Describing course concepts in metaphors, e.g., “How is learning like an ocean”? [surface vs. depth]
- Increasing student self-reflection and self-review
- Students should paraphrase for deep learning and relate material from class to their own experience and to their reading. There are a variety of tasks that can be assigned (e.g., reducing a chapter to a 3x5 card promotes deep processing as well as the repetition necessary for mastering the basic data or fundamental vocabulary).
- Class interaction that emphasizes the “higher order” skills in Bloom’s Taxonomy [analysis, synthesis, application, and evaluation] promote deeper learning.

(Continued on page 4)

**TABLE:**

<b>Surface Approach</b>	<b>Deep Approach</b>
<i>Characteristics</i>	<i>Characteristics</i>
Students dependent on information provided for them	Students search for understanding
Students focus on regurgitation of facts	Students produce better written work (logical structures & conclusions rather than lists)
<i>Factors that Foster</i>	<i>Factors that Foster</i>
Excessive amount of course material	Motivational context
Little opportunity to peruse subjects in depth	Significant engagement with course material
Little choice over topics or methods of study	Interaction with others
An anxiety-provoking assessment system that rewards or tolerates regurgitation of factual information	A well-structured knowledge base

## CTE Brown Bag Series



Our “Brown Bag” sessions are designed as an opportunity for faculty members to meet and discuss topics of general interest to all of them. This semester, we are pleased to have sessions that focus on the teacher/student relationship, the basic element of the educational enterprise.

Each session is presented on two consecutive days to try to make it easier for every faculty member to attend. So bring your lunch and enjoy food for both the body and the mind once a month at the CTE!

### This Semester’s Brown Bag Sessions

*All will be in Thayer 120 from noon-1315*

February 26/27

#### **INSPIRATION--IT’S NOT A NOTION; IT’S AN ACTION!**

Ever wonder as a teacher, “What do I have to do to get through to my students?” CPT Howard D. McInvale, Department of Mathematical Sciences, will present insights on inspiring students in the classroom. The presentation offers some practical ideas on how to get and keep students’ attention. Come hear about some ideas that have worked and others that have bombed. Come prepared to offer your own experiences in an interactive and lively discussion.

March 25/26

#### **TEACHING WITH THE LEARNER IN MIND**

MAJ Mark Read of D/G&EnE will recount his evolution from a competent and successful company commander, focused on *training* soldiers, to an instructor more attuned to *teaching* undergraduates. Since the majority of our faculty members come to USMA from the same experience as MAJ Read, his presentation will provide a rich opportunity for discussion of the elements of learner-centered teaching—along with practical examples of how one can teach “with the learner in mind.”

April 22/23

#### **CLASSROOM INTERACTION PATTERNS**

- COL Barney Forsythe

Have you ever wondered why the great discussion you wanted to have in class ended up with you doing all the talking? One possible explanation is that the cadets weren't prepared. But another explanation has to do with the way in which you structured the interaction. During this session, we will learn to use a framework for facilitating classroom interactions that, when applied properly, can help teachers make their active learning strategies more effective. Participants will learn how to analyze and organize verbal interactions among classroom participants (students and the teacher) in order to achieve desired learning outcomes. Specific topics will include recitation, Socratic dialogue, discussion, and questioning techniques.



### **Tickets are now on sale!**

#### **For our first annual academic luncheon “Celebrating Teaching”**

**On Monday, 17 May 2004 at noon at the West Point Club**

**\$10 for a delicious buffet luncheon  
stimulating guest speaker  
& Door Prizes!**

Tickets can be purchased at anytime directly from the CTE or in your own department (POC is the advisory committee member listed on page 4 of this newsletter).

Cash or checks (made out to West Point Chapter Phi Kappa Phi)

And remember that there’s a drawing for a free ticket at every CTE Brown Bag session this semester!

## Preparation for Class

*Faculty members frequently complain about cadets' lack of preparation for class, but we rarely frame the issue as one of "integrity." The Center for Academic Integrity defines academic integrity as a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals to action. In looking at the situation in light of the following document from the Center for Academic Integrity, it is clear that class preparation by both the instructor and the students involves mutual responsibilities, and the failure of either party to fulfill those responsibilities reflects a lack of respect for the other as well as a violation of "academic integrity."*

### What Academic Integrity Requires of Instructors in This Area

With regard to coming prepared for class, the principles of academic integrity require that instructors come having done the things necessary to make the class a worthwhile educational experience for the students. This requires that teachers:

- ◆ Reread the text (even when they've written it themselves),
- ◆ Clarify information they might not be clear about,
- ◆ Prepare the class with an eye toward what is current today (that is, not simply rely on past notes), and
- ◆ Plan the session so that it will make it worth everyone's while to be there.

### What Academic Integrity Requires of Students in This Area

With regard to coming prepared for class, the principles of academic integrity suggest that students have a responsibility to themselves, to the professor, and to their classmates to do the things necessary to put themselves in a position to make fruitful contributions to class discussion. This will require students to:

- ◆ Read the text before coming to class,
- ◆ Clarify anything they're unsure of (including looking up words they don't understand),
- ◆ Formulate questions they might have so they can ask them in class, and
- ◆ Think about the issues raised in the readings.

*These principles grow out of, and are based upon, ideas contained in the first draft of "The Fundamental Values of Academic Integrity," a document that was developed by, and is available from, the Center for Academic Integrity (<http://www.academicintegrity.org>).*

119 Thayer Hall

**Director:**

Dr. Anita Gandolfo  
x6155

**Asst. Director**

Dr. David Trubatch  
x4257

**Instructional Technologist**

Mr. Jeffrey Rohrlick  
x4670

**Blackboard Administrator**

Mr. Rick Alwine  
x5427

**Secretary:**

Ms. Maretta Melvin  
x7947

## CTE ADVISORY COMMITTEE

LTC Putko	BTD
LTC Hampton	D/BS&L
COL Blackman	D/Chem
Prof. Evans	D/C&ME
COL Ressler	D/EE&CS
MAJ Jebb	D/English
Prof. Saldivar	D/FL
Prof. McDonald	D/History
Prof. Malinowski	D/G&EnE
CPT Harvey	DMI
LTC Heidenberg	D/Math
Dr. Tandy	DPE
COL Belknap	D/SE
LTC Willner	D/SocSci
LTC Naessens	D/Physics
Prof. Welton	D/Law
Ms. Swik	Library

## Deep" and "Surface" Learning

*(Continued from page 2)*

Trying to change students' orientation to deeper learning may seem to be a monumental task, but there is encouraging advice from the experts—think small! That is, making small modifications in class activities and assignments to move toward deeper engagement seems to have a positive effect on creating an academic environment conducive to deeper learning. So consider something you might modify in a course you teach to promote deeper learning. The CTE welcomes any experiences you have with this that might be helpful to colleagues who are interested in promoting deeper learning in their courses.

**Note:** Authored by Anita Gandolfo, parts of this article are based on ATHERTON J S (2003) *Learning and Teaching: Deep and Surface Learning* [On-line] UK: Available: <http://www.dmu.ac.uk/~jamesa/learning/deepsurf.htm> Accessed: 27 January 2004