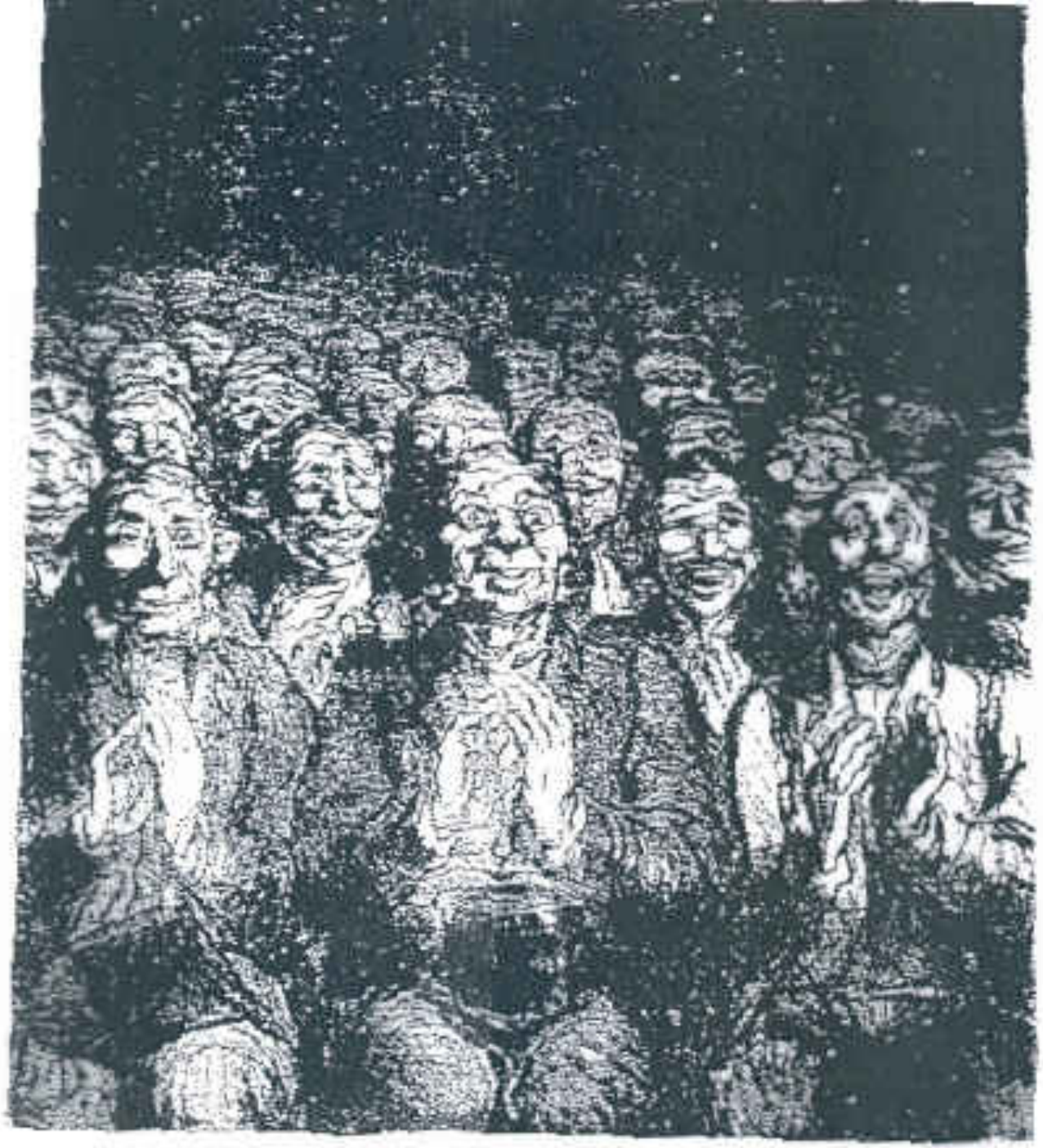
Using Cooperative Activities To Promote Deep Learning

Barbara J. Millis
Director, Teaching and Learning Center
University of Texas at San Antonio



The Zen of Power Point

Goals

- An Overview/Introduction to Cooperative Learning
- **Three-Step Interview**: Exploring Cooperative Learning
- **Roundtable**: Barriers to Cooperative Learning
- **Standup and Share**: A Rapid Report-Out Method

Agenda, Continued

- **A Look at the First Key Learning Principle**
- **A Look at a Second Key Learning Principle with three examples**
- Deep Learning with Three Sequenced Examples:
  - Combining a Graphic Organizer with a Jigsaw
  - **Combining a Graphic Organizer (Pro-Con-Caveat Grid) with Teamwork**
  - Combining a Graphic Organizer (Double-Entry Journal) with Pair work

Agenda, Continued

- **Numbered Heads Together/Structured Problem Solving**: Solutions to Barriers
- **Three Stay One Stray**: A Rapid Report Method
- **A Look at a Third Learning Principle with examples**
- Conclusion

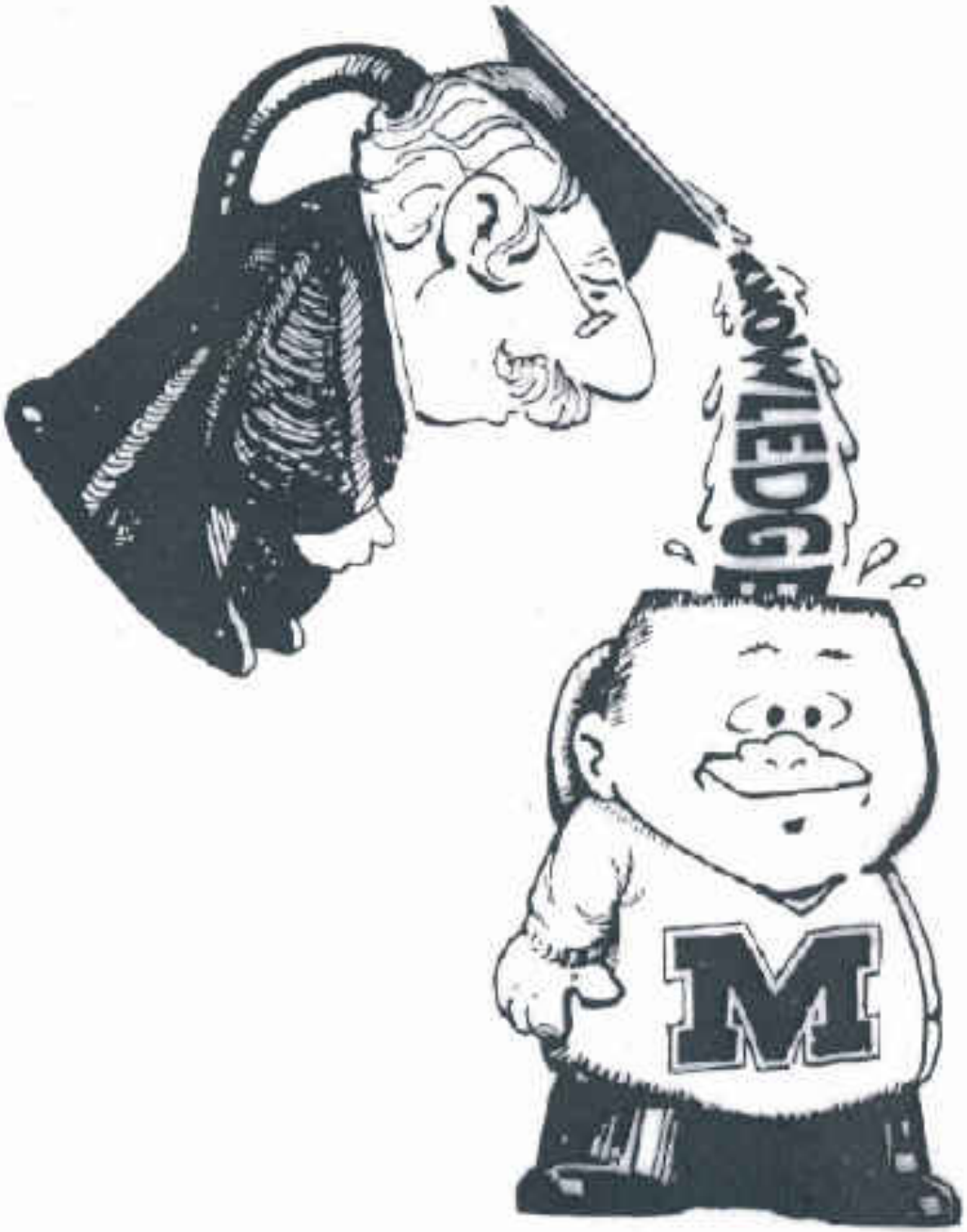
Warning!

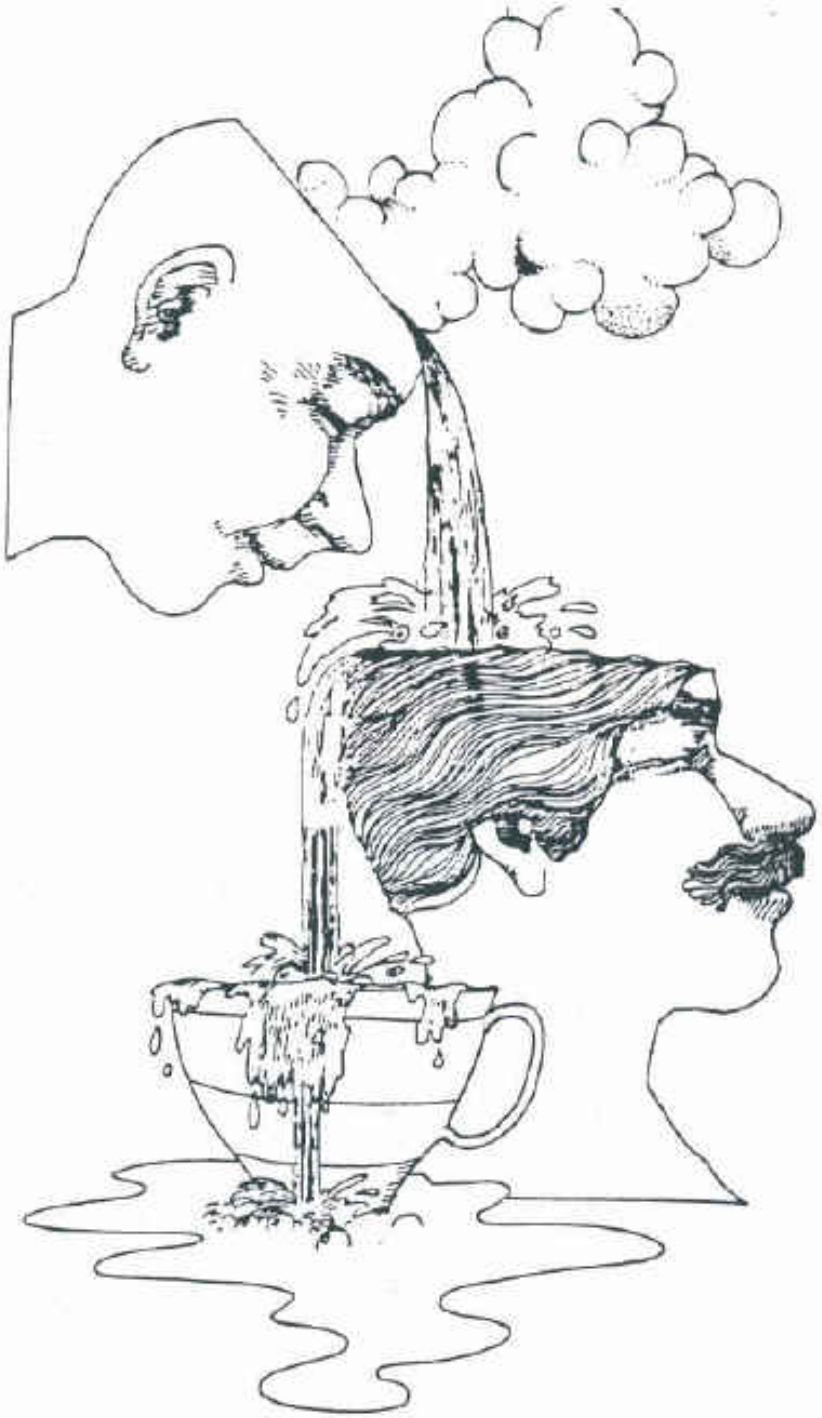
Do not do unto your students what I am about to do to you. Begin slowly with active learning.

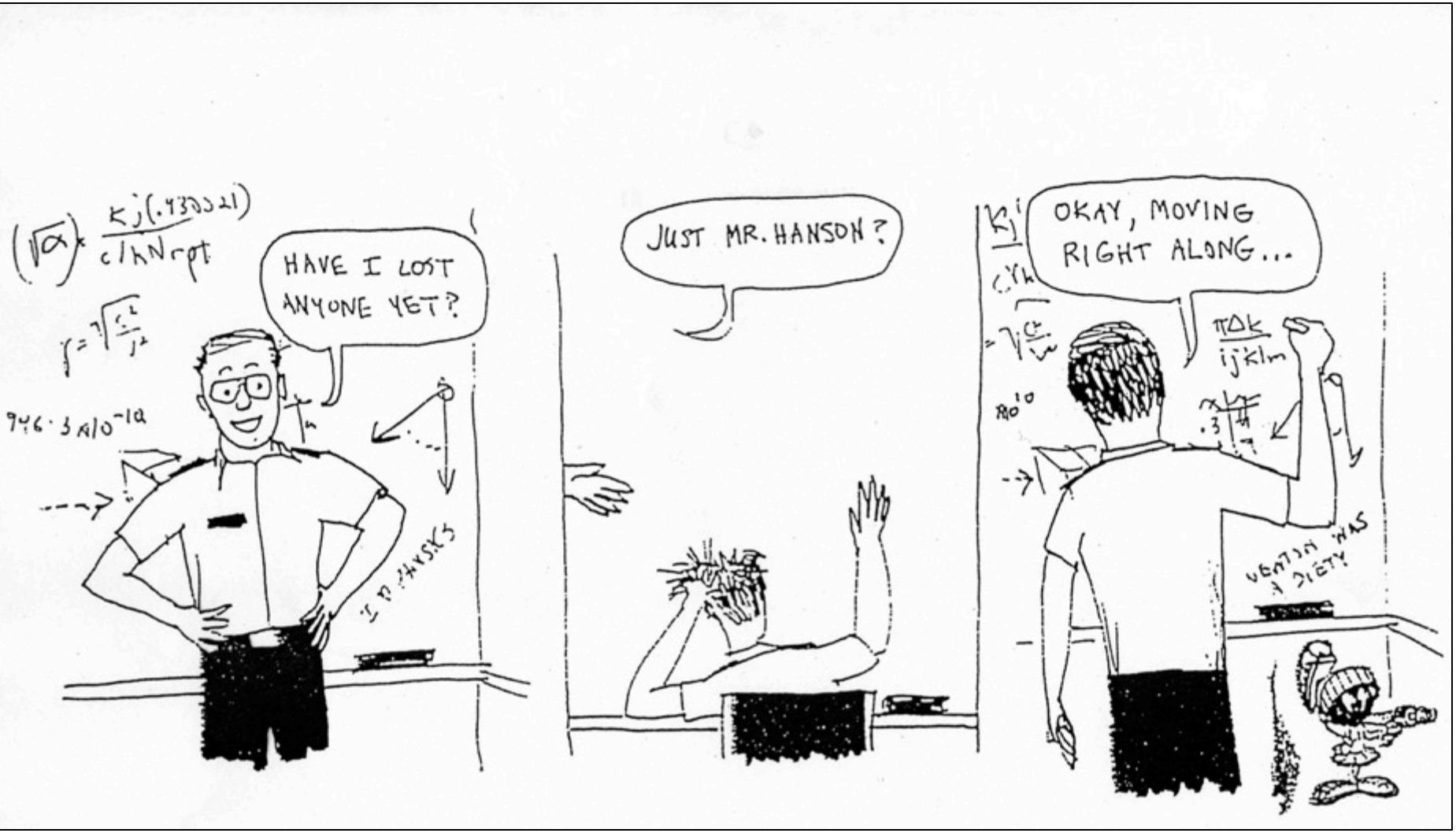
My Discipline-Specific Applications

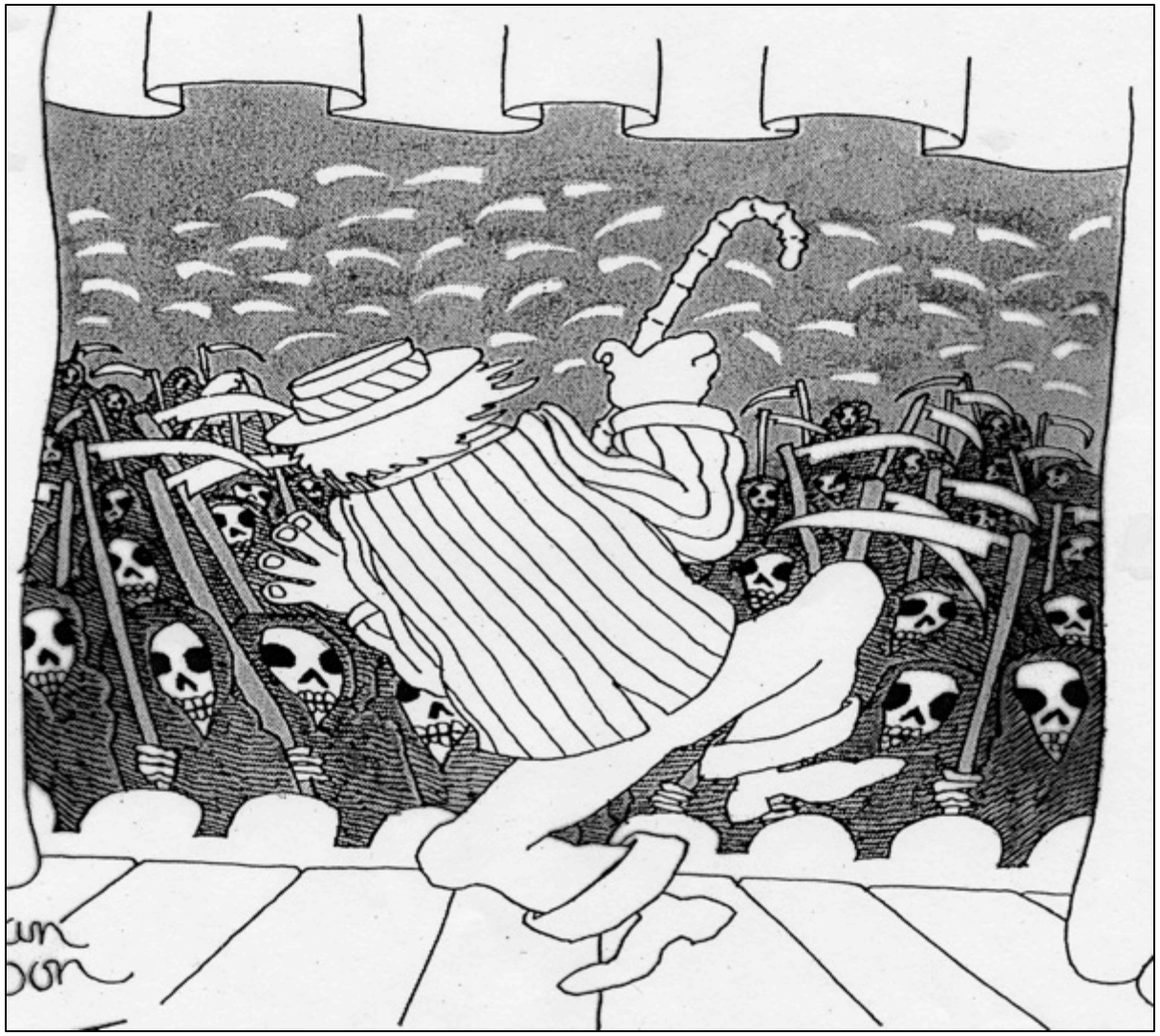
Structure/Activity/Assignment	Ways I could Use It

Larson
OK
NO
good


KNOWLEDGE
M




HAVE I LOST ANYONE YET?
JUST MR. HANSON?
OKAY, MOVING RIGHT ALONG...



THE SUDDEN, SURE KNOWLEDGE THAT

ONE'S BEST EFFORTS HAVE COME TO NAUGHT

What is Cooperative Learning?

IDEA PAPER #38

OCTOBER 2002

Enhancing Learning—and More!—Through Cooperative Learning

Barbara J. Millis,
U. S. Air Force Academy

Some of higher education's most challenging goals include enhancing critical thinking, promoting "deep" (as opposed to superficial) learning, encouraging both self-esteem and the acceptance of others, and improving interpersonal effectiveness (with an emphasis on team skills). This paper describes cooperative learning, an instructional approach designed especially with these objectives in mind.

What is Cooperative Learning?

Cooperative learning, like collaborative learning, entails small groups working on specific tasks. It seeks to overcome some of the weaknesses of traditional small group approaches by structuring activities carefully. Cooper (1990, p. 1), in fact, regards the key to successful cooperative learning as "Structure! Structure! Structure!" Macaulay and Gonzalez (1996, p. 2) characterize it as:

> The instructional use of small groups so that learners are able to work together in a manner that enhances both group and individual learning. The key to cooperative learning is the careful structuring of learning groups. There are many ways to structure such groups, but some of the key elements are the building of interdependence, the designing of interactive processes, and accountability. The building of social skills around such areas as decision-making, communication, and conflict management is also fundamental to cooperative learning.

Tang (1998, p. 116) offers an international perspective on cooperative learning, emphasizing some of its practices and effects:

> Co-operative learning provides a non-threatening learning context for interaction between students. During co-operative learning, students are exposed to other perspectives and alternatives, they share and exchange ideas, criticise and provide feedback. Peer feedback can help students increase their awareness of their learning aims, and of the strategies to employ to achieve those aims. Collaboration provides "scaffolding" for mutual support and enables students to learn from each other. The function is a teaching function, although the major interaction is student-student, rather than teacher-student, as teaching is normally understood.

Regardless of the definition of cooperative learning, most experts agree that its foundation rests on several significant premises.

The Premises Underlying Cooperative Learning

The first premise underlying cooperative learning is respect for students–regardless of their ethnic, intellectual, educational, or social backgrounds–and a belief in their potential for academic success. Sapon-Shevin, Ayres, and Duncan (1994, p. 46) suggest: "Cooperative learning . . . builds upon heterogeneity and formalizes and encourages peer support and connection. . . . ***All*** students need to learn and work in environments where their individual strengths are recognized and individual needs are addressed. ***All*** students need to learn within a supportive community in order to feel safe enough to take risks."

Second, cooperative learning promotes a shared sense of community. Learning, like living, is inherently social. This approach offers students support and encouragement through systematic classroom interactions. An intellectual synergy develops, and positive relationships typically emerge.

Third, cooperative learning is predicated on the premise that learning is an active, constructive process. Myers and Jones (1993, xi) find that such learning "provides opportunities for students to ***talk and listen, read, write,*** and ***reflect*** as they approach course content through problem-solving exercises, informal small groups, simulations, case studies, role playing, and other activities–all which require students to ***apply*** what they are learning." As a result, learning is not passively absorbed nor are facts simply added systematically to existing knowledge. Students often take new material–including conflicting viewpoints–and integrate, reinterpret, and transform it until new knowledge is forged. Thus, learning is produced, not reproduced.

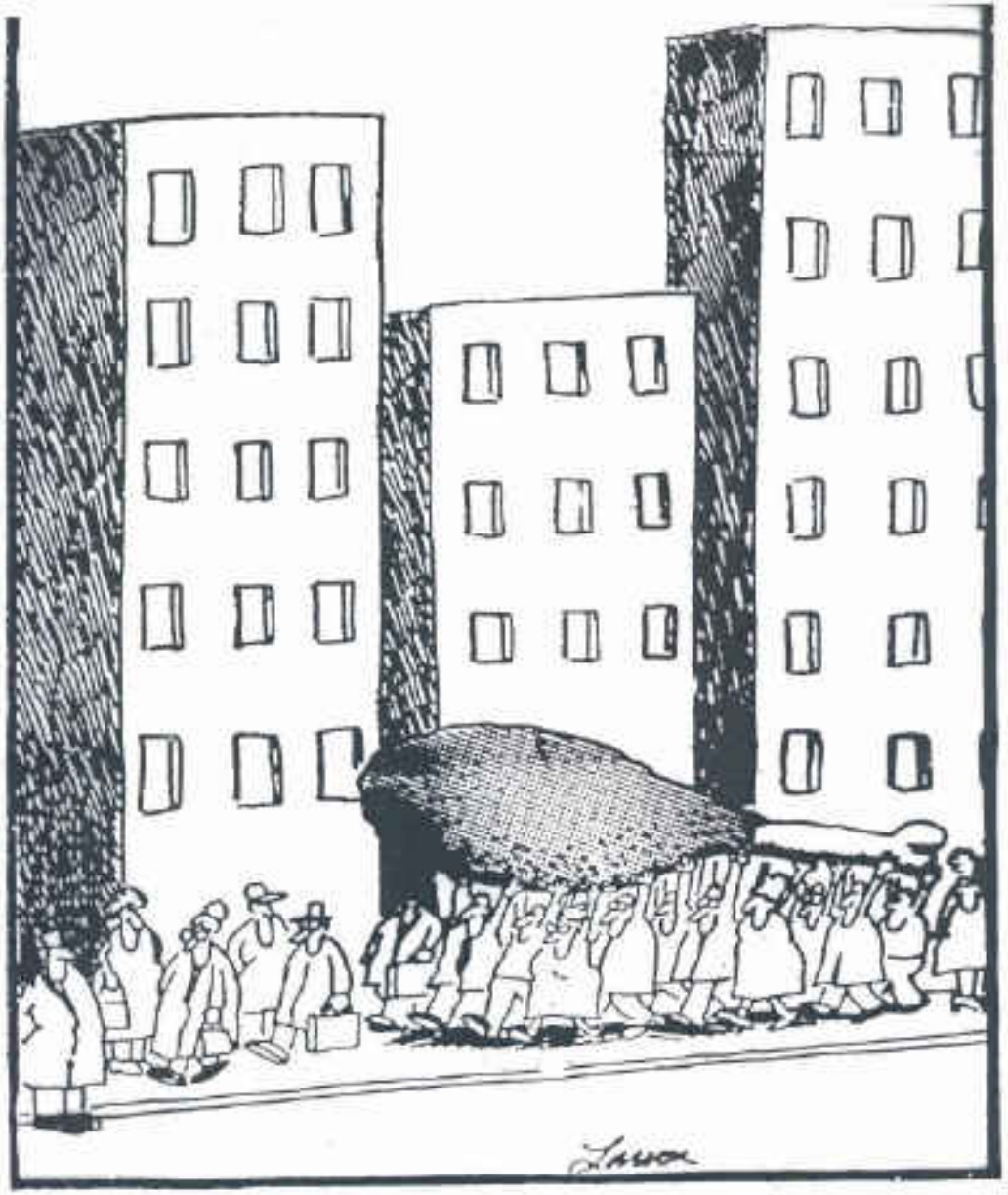
The role of the instructor changes from a deliverer-of-information to a facilitator of learning. This does not mean that faculty members, who will always remain authorities in the definitive sense, abdicate their responsibility to students; rather, it means that they assume the role of "midwife professors" who "assist . . . students in giving birth to their own ideas, in making tacit knowledge explicit and elaborating on it" (Belenky, Clinchy, Goldberger, & Tarule, 1986, p. 217).

Theory and Research

Establishing a cooperative classroom entails understanding the underlying theory in order to select effective teaching approaches. Leamnson (1999, p. 8) emphasizes that "a good pedagogy *selects* what is appropriate and is not wedded to a method, no matter how innovative or popular." Similarly, Palmer (1998, p. 12) reminds us that, "Our challenge is not to reduce good teaching to a particular form, model, methodology, or technique, but to understand its dynamics at the deeper levels, the underpinnings, to understand the dynamics that make connectedness a powerful force for learning in whatever forms it takes."

Using a connected, cooperative approach also reinforces the concepts of "deep learning." Four key components–totally consistent with cooperative learning practices–characterize a deep, rather than a surface approach to learning. Rhem (1995, p. 4) summarizes them as follows:

> **Motivational context:** We learn best what we feel a need to know. Intrinsic motivation remains inextricably bound to some level of choice and control. Courses that remove these take away the sense of ownership and kill one of the strongest elements in lasting learning.
>
> Learner activity: Deep learning and "doing" travel together. Doing in itself isn't enough. Faculty must connect activity to the abstract conceptions that make sense of it, but passive mental postures lead to superficial learning.
>
> **Interaction with others:** As Noel Entwistle put it in a recent email message, "The teacher is not the only source of instruction



How social animals work together.

The Quiet Signal

The Three Step Interview

Three Step Interview Questions

“Sponge”
or
Extension
Activity

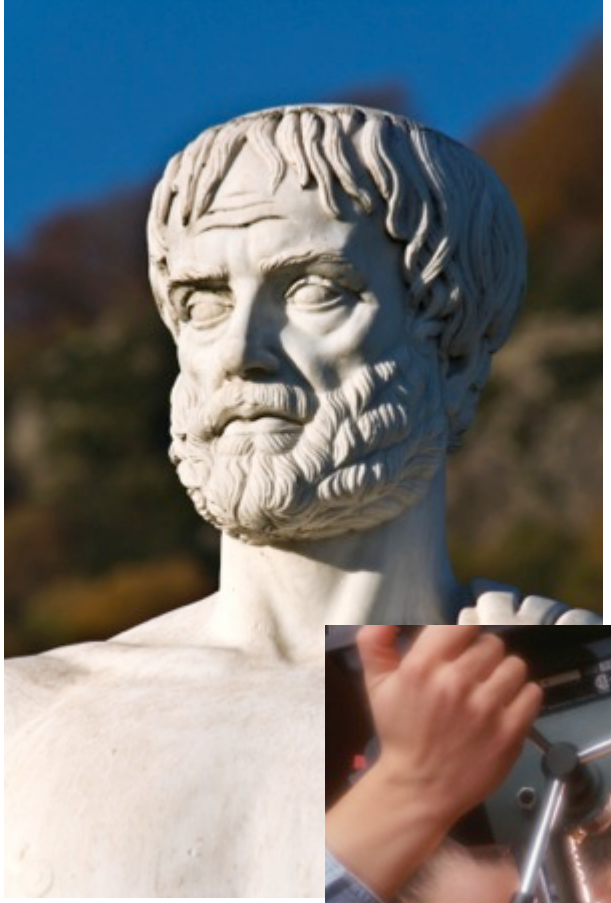
First Things First
START

MISS PEACH/MELL LAZARUS

"Curses! . . . How long does it take Igor to go out and bring back a simple little brain, anyway?"

Monitoring

Three Step Interview
Applications in Various Disciplines



Three-Step Interview
Your Class Applications:

Structure/Activity/Assignment	Ways I could Use It

Group Formation

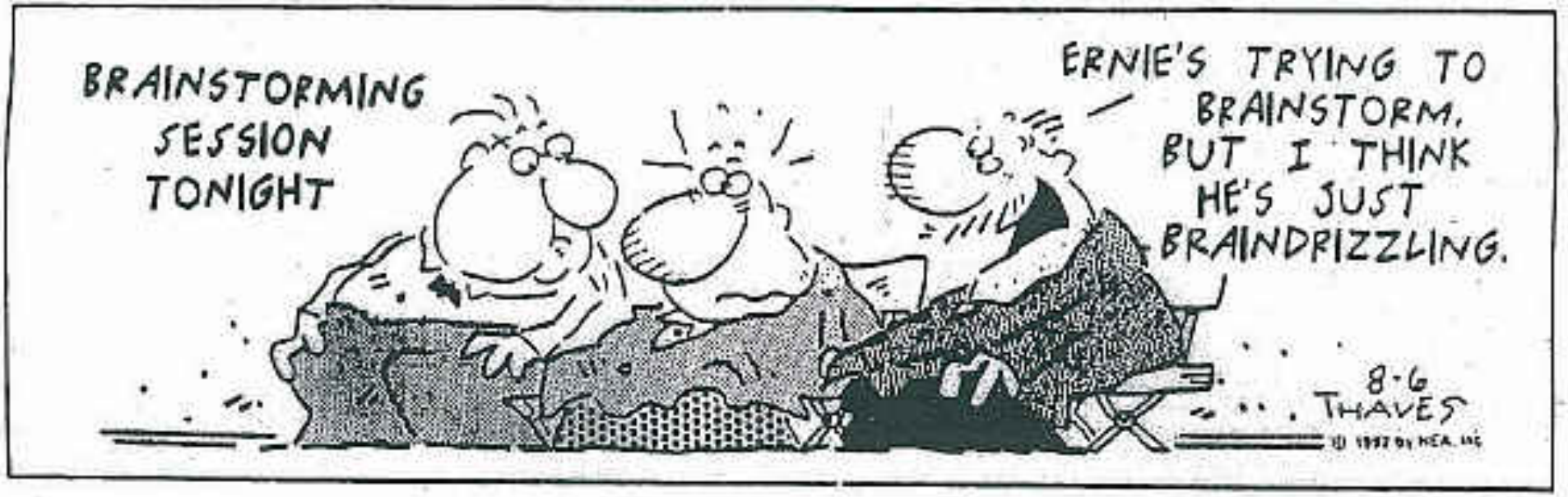
Individual Identity: Typical Student Team Roles

A Rapid Report-
Out Method:
Luck of the
Draw

Groups in Course Management Systems

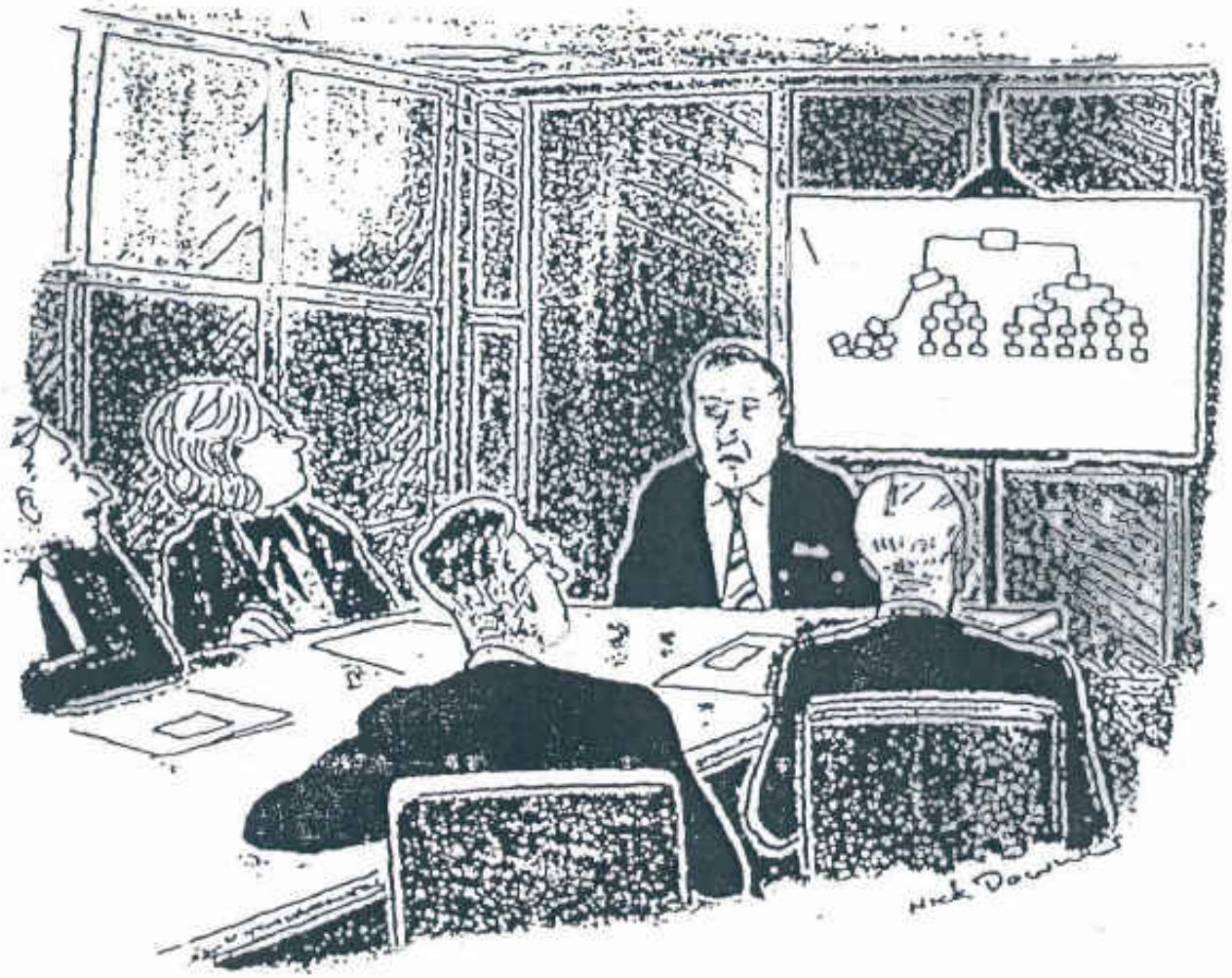
Roundtable

FRANK & ERNEST BOB THAVES



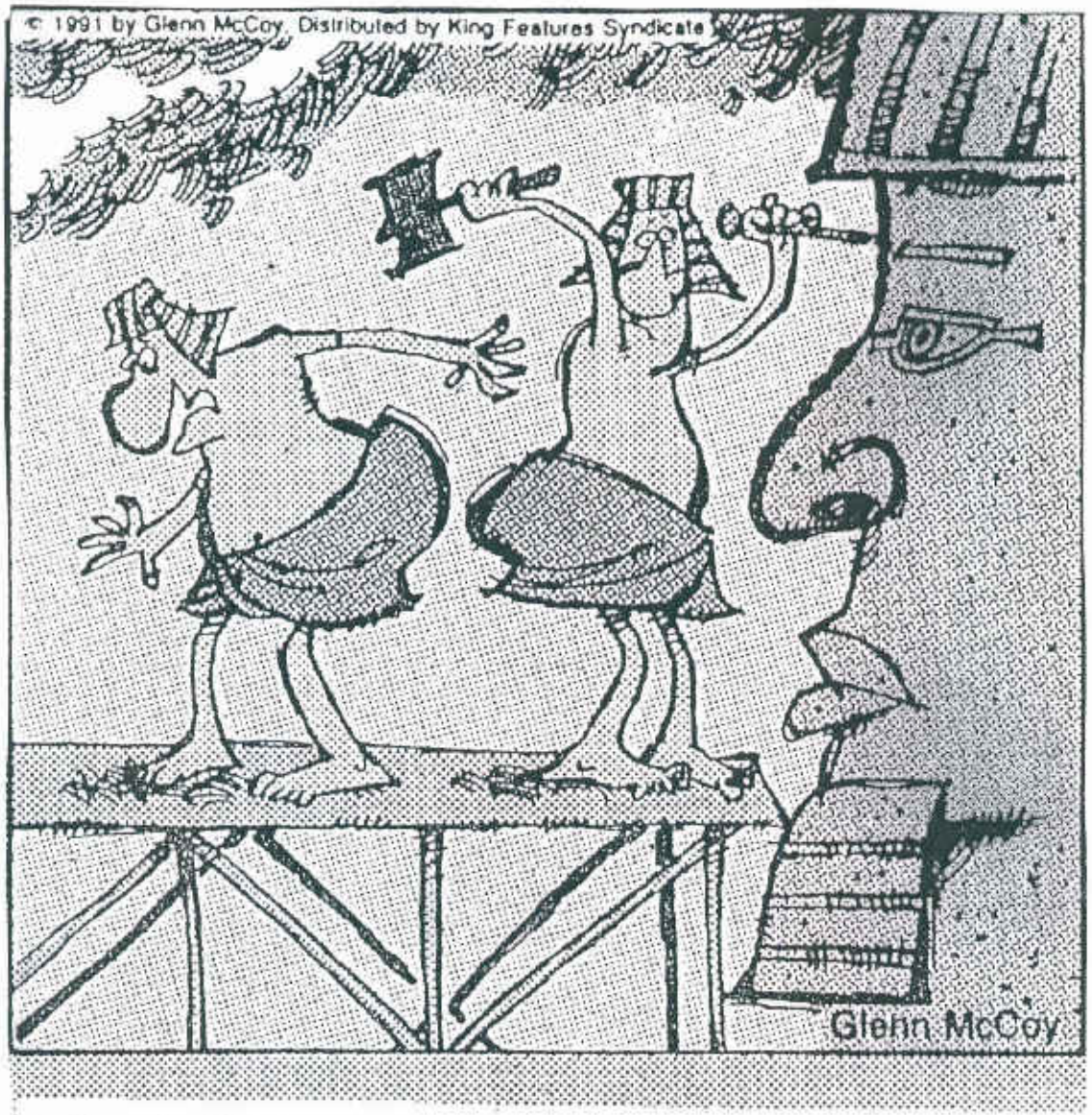
What are some barriers to cooperative learning?

- **Your own misgivings?**
- **Student concerns?**
- **Departmental barriers?**
- **Institutional?**



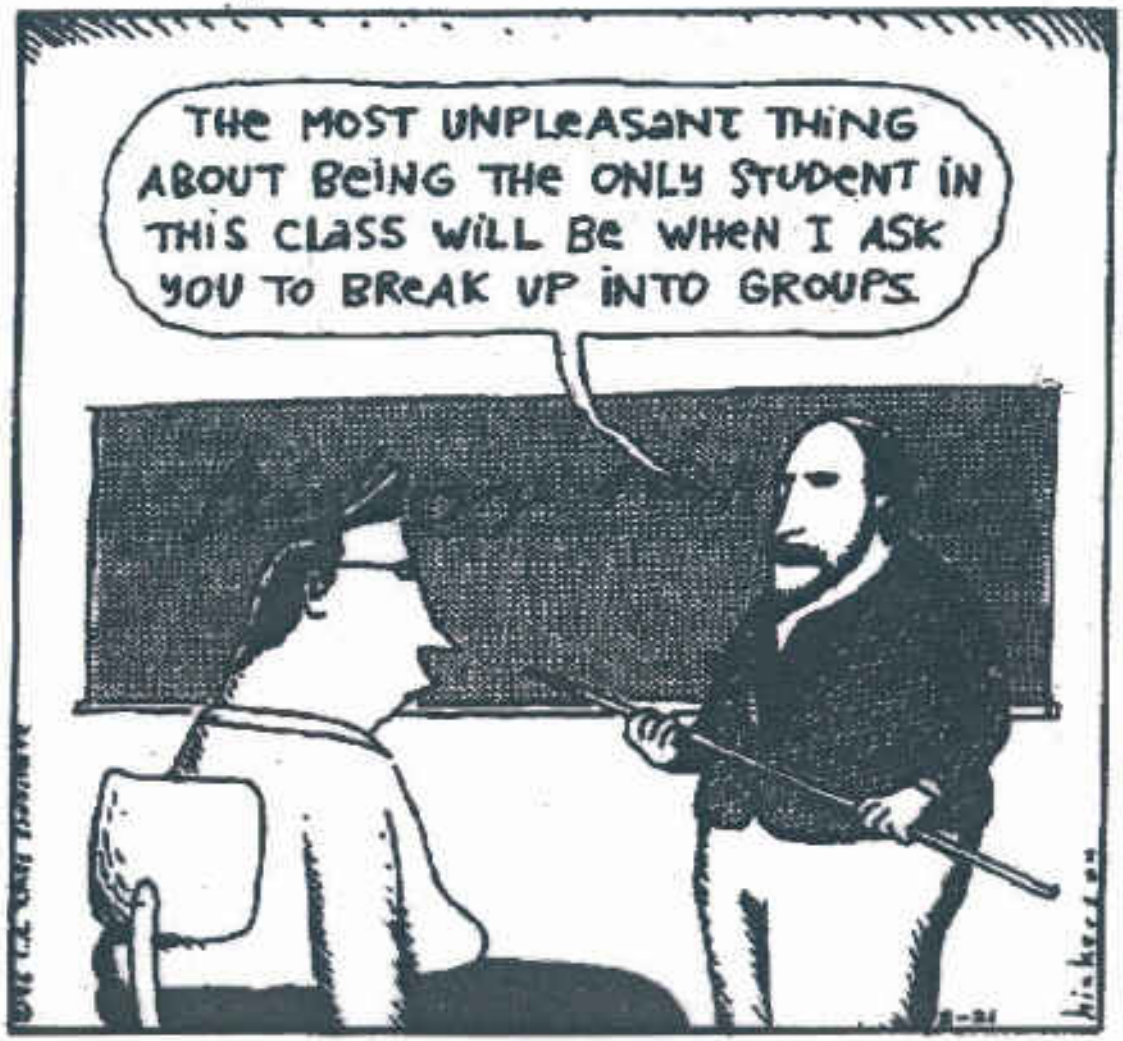
"Clearly, someone's not holding up his end."

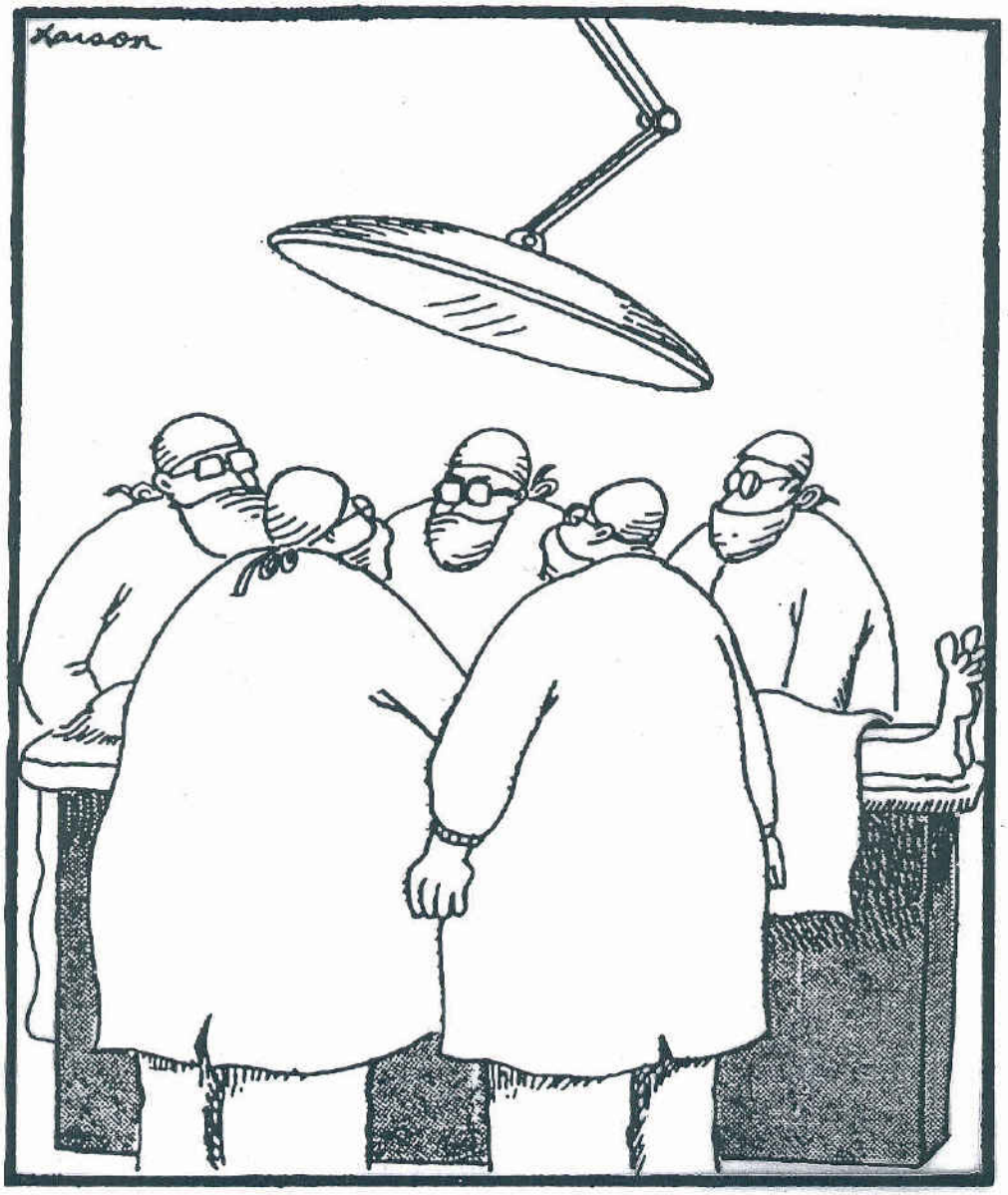
© 1991 by Nick Downes; from *Harvard Business Review*.



"Hey! Wait a minute! Those guys down there are building a lion!"

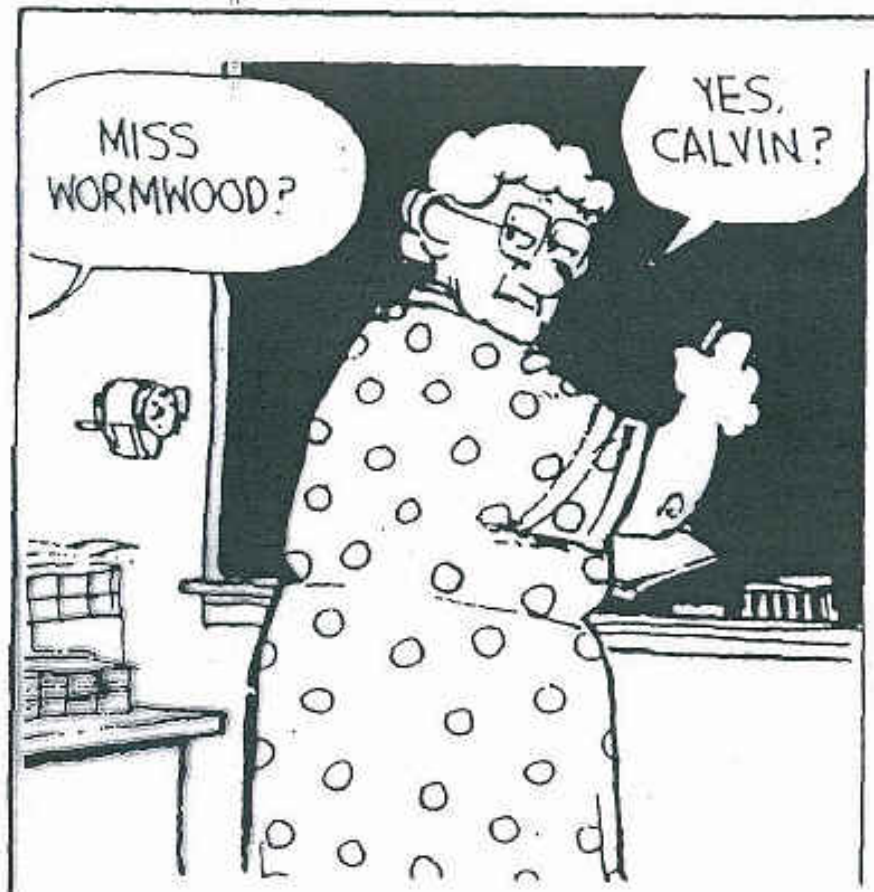
Small Groups





"OK, Williams, we'll vote . . . how many here say the heart has four chambers?"

CALVIN AND HOBBES BILL WATTERSON



YOU CAN PRESENT THE MATERIAL, BUT YOU CAN'T MAKE ME CARE.

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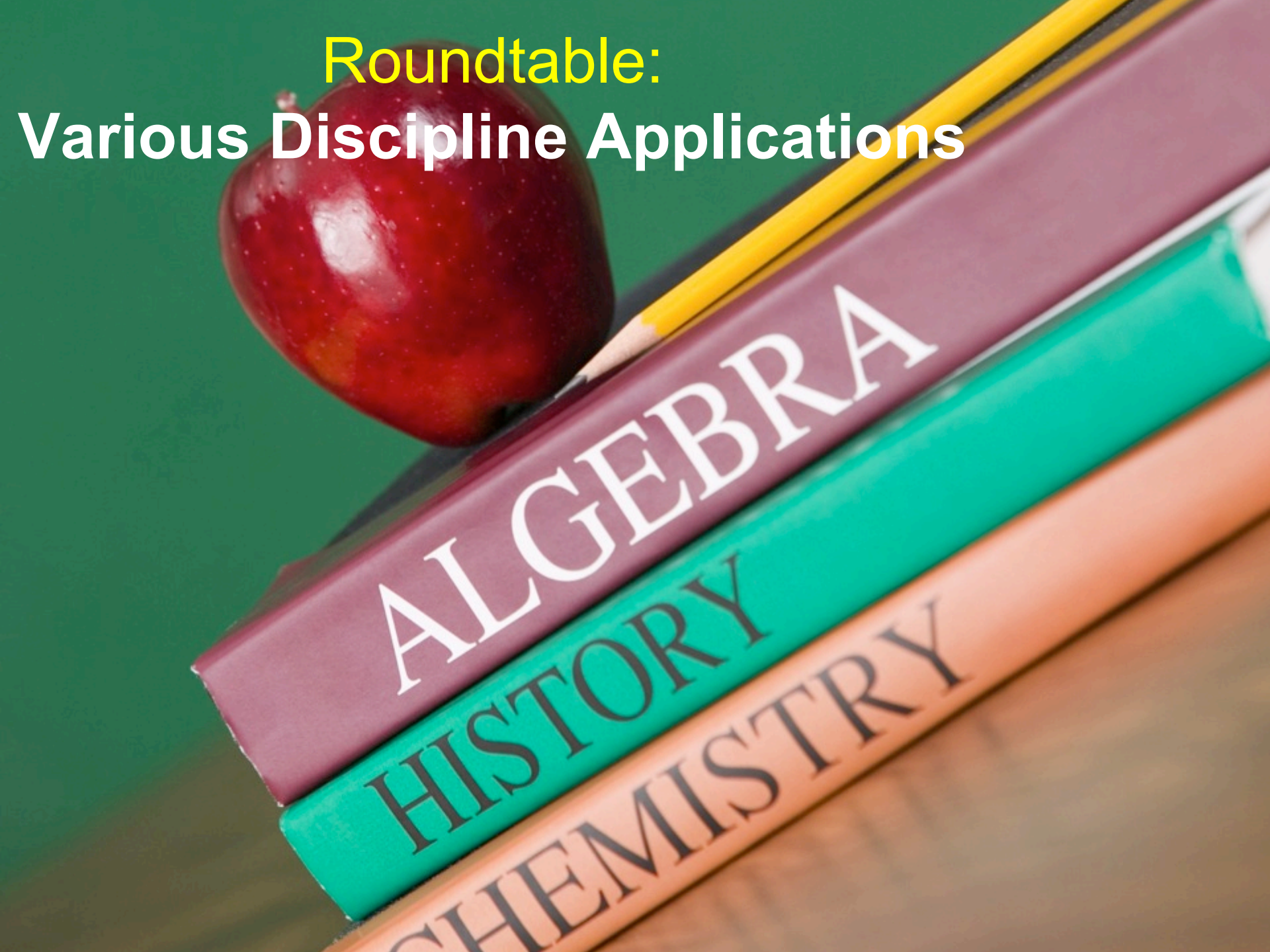
I should get a refund of part of my tuition -- I had to teach myself.

Roundtable:
Various Discipline Applications

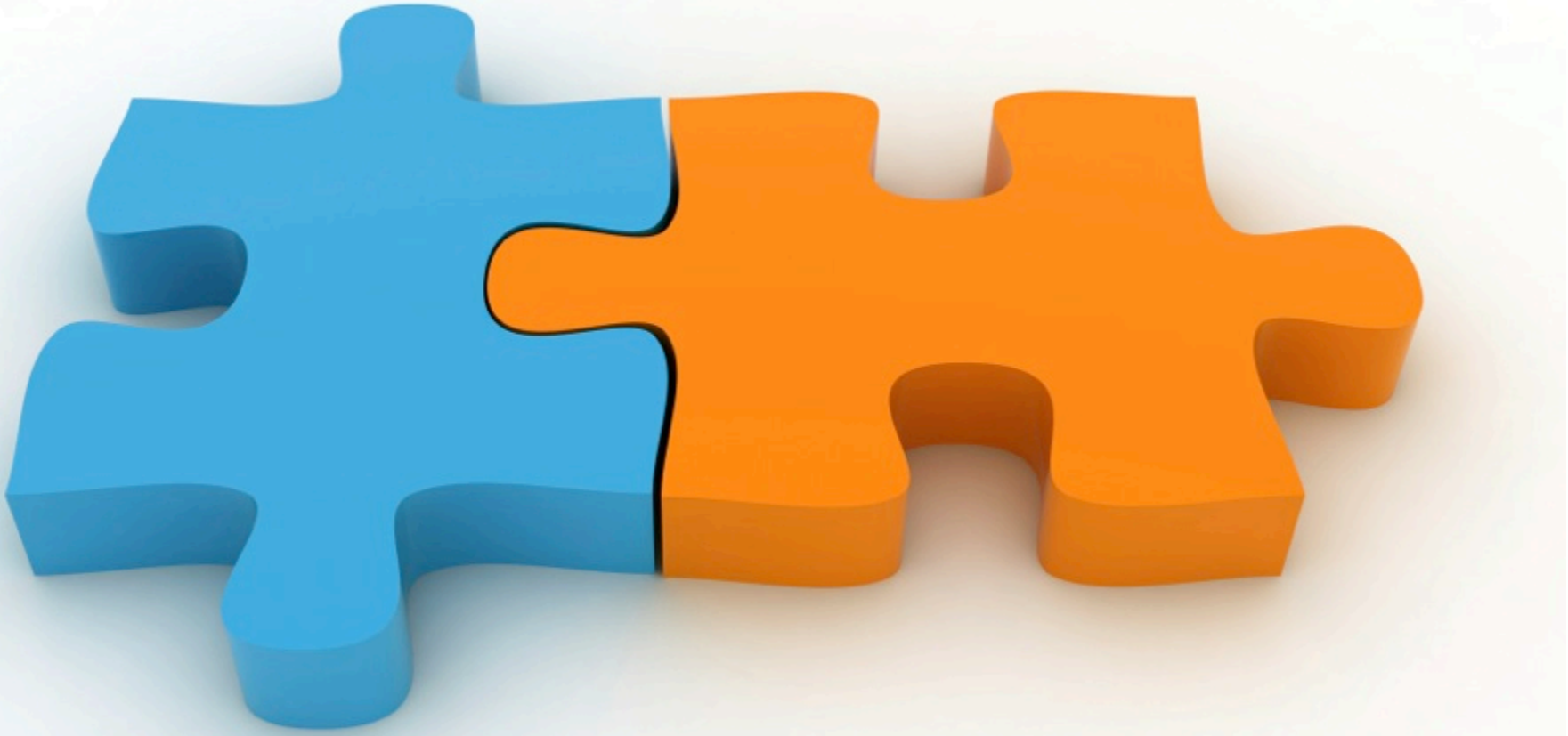


Roundtable
Your Class Applications:

Structure/Activity/Assignment	Ways I could Use It

Stand up and Share

Linking Cooperative Learning to the Research on How People Learn



How People Learn

Brain,

mind,

experience,

and

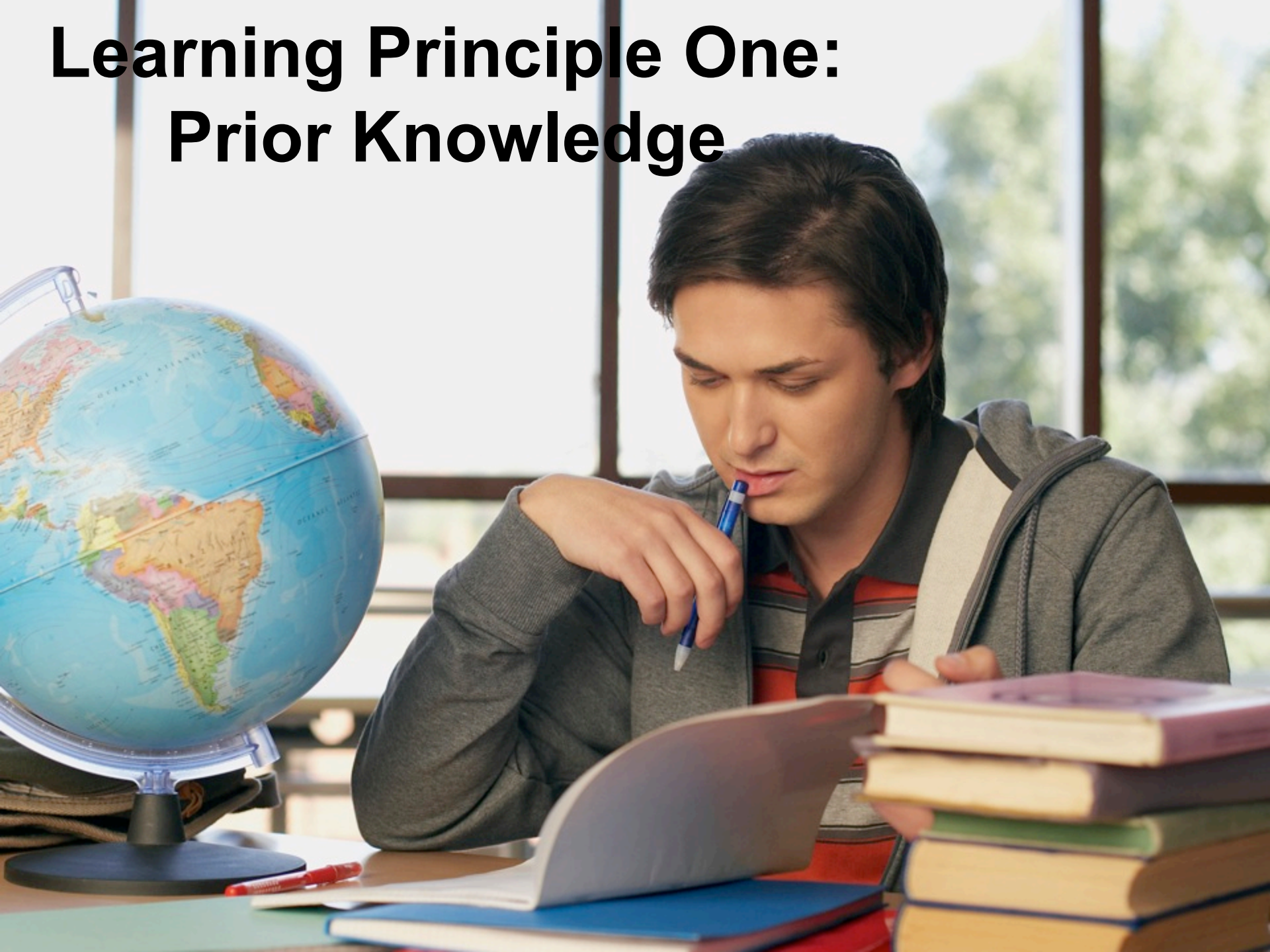
Three

Findings

Three Key Learning Principles:

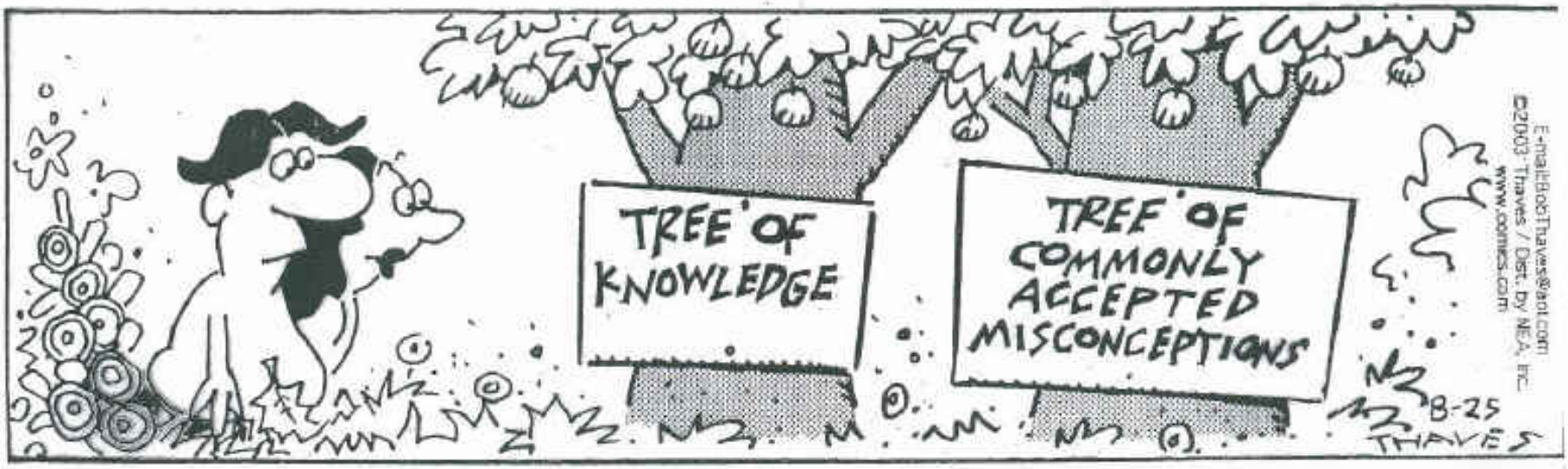
- Prior Knowledge
- Deep Foundational Knowledge based on Concepts
- Metacognition

Learning Principle One: Prior Knowledge



Teaching and Learning Implications from Principle One

FRANK & ERNEST By Bob Thaves



Run, Forrest, Run!

Classroom Assessment Techniques:

CATs

Background Knowledge Probe

Assessing Prior
Knowledge

How Familiar are you with Classroom Assessment Techniques?

STUDENT INFORMATION FOR
First
Middle
Male
Female

Focused Listing:

Metacognition

Focused Listing

Directed Paraphrasing

Application

John Hertel's "Key Principles and Restating"

Comedy Cottage

Key point = whether the manager violated the duty loyalty and competition by opening his business in the same location

---

Key point = issue injunction to stop lease order to prevent him from competing in the comedy club business within a certain distance

Comedy Cottage

No idea what this case is about. Don't remember.

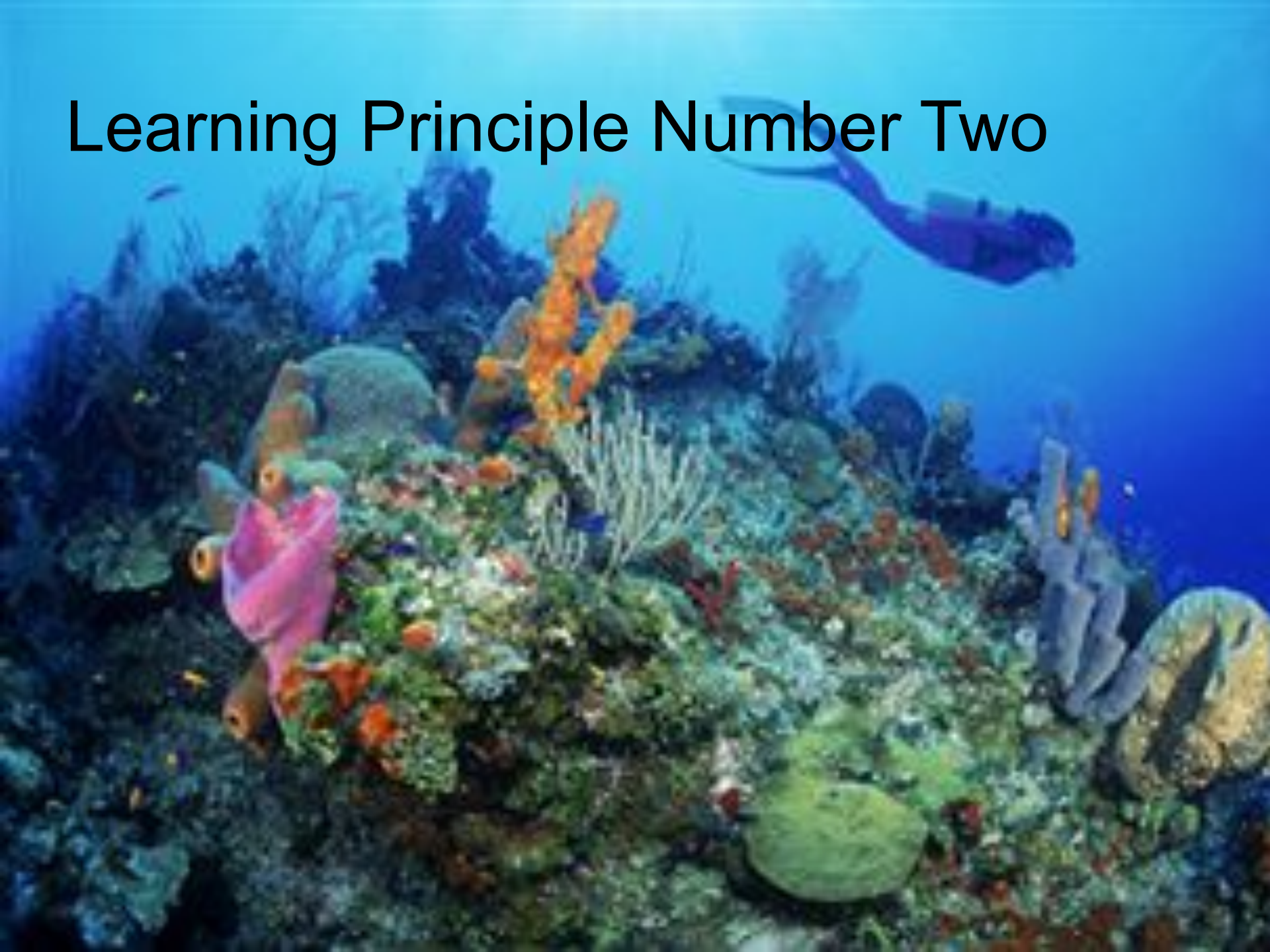
One principle is that of loyalty. In a corporation you are required to be loyal and not take their secrets and go create you own business (copy cat)

Applications:
Focused Listing
Directed Paraphrasing
Application Card
“Key Principle and Re-Thinking”

Structure/Activity/Assignment	Ways I could Use It

What is Learning?

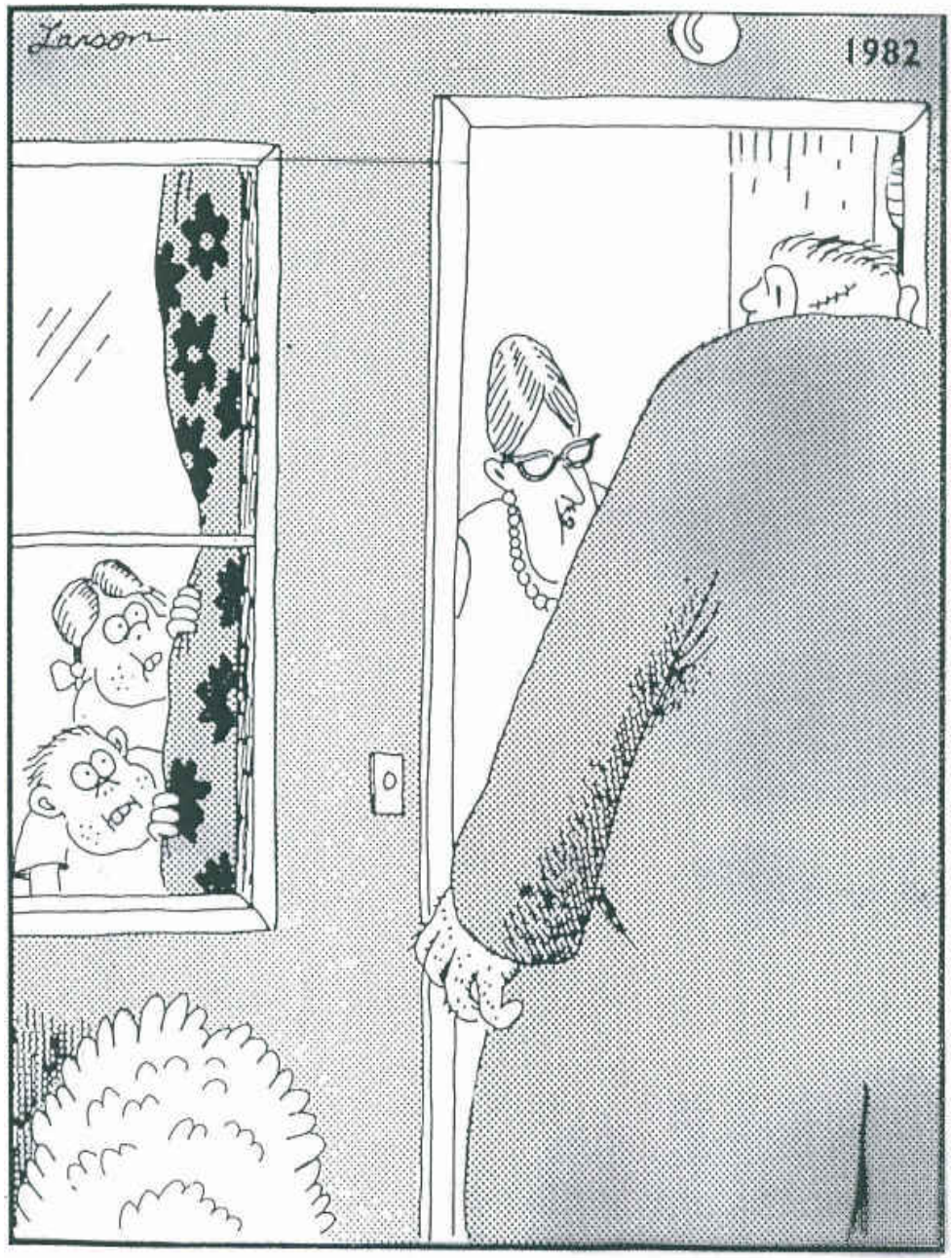
Learning Principle Number Two



What is Deep Learning?

- Motivational Context
- Active Learning
- Interaction with Others
- Deep Foundational Knowledge based on concepts

Motivational
Context



"Why, yes … we do have two children who won't eat their vegetables."

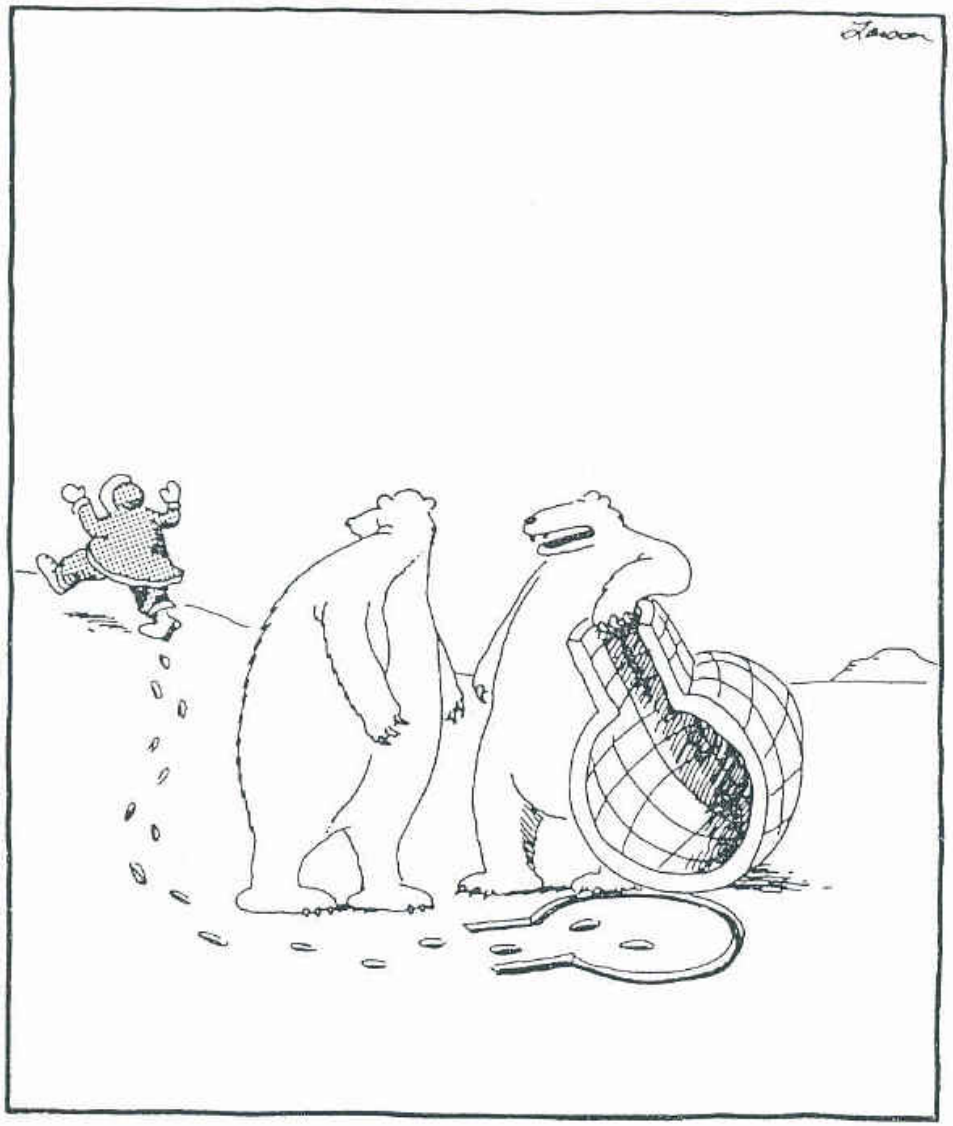
"Sandwiches!"

FRANCIE / Sherrie Shepherd

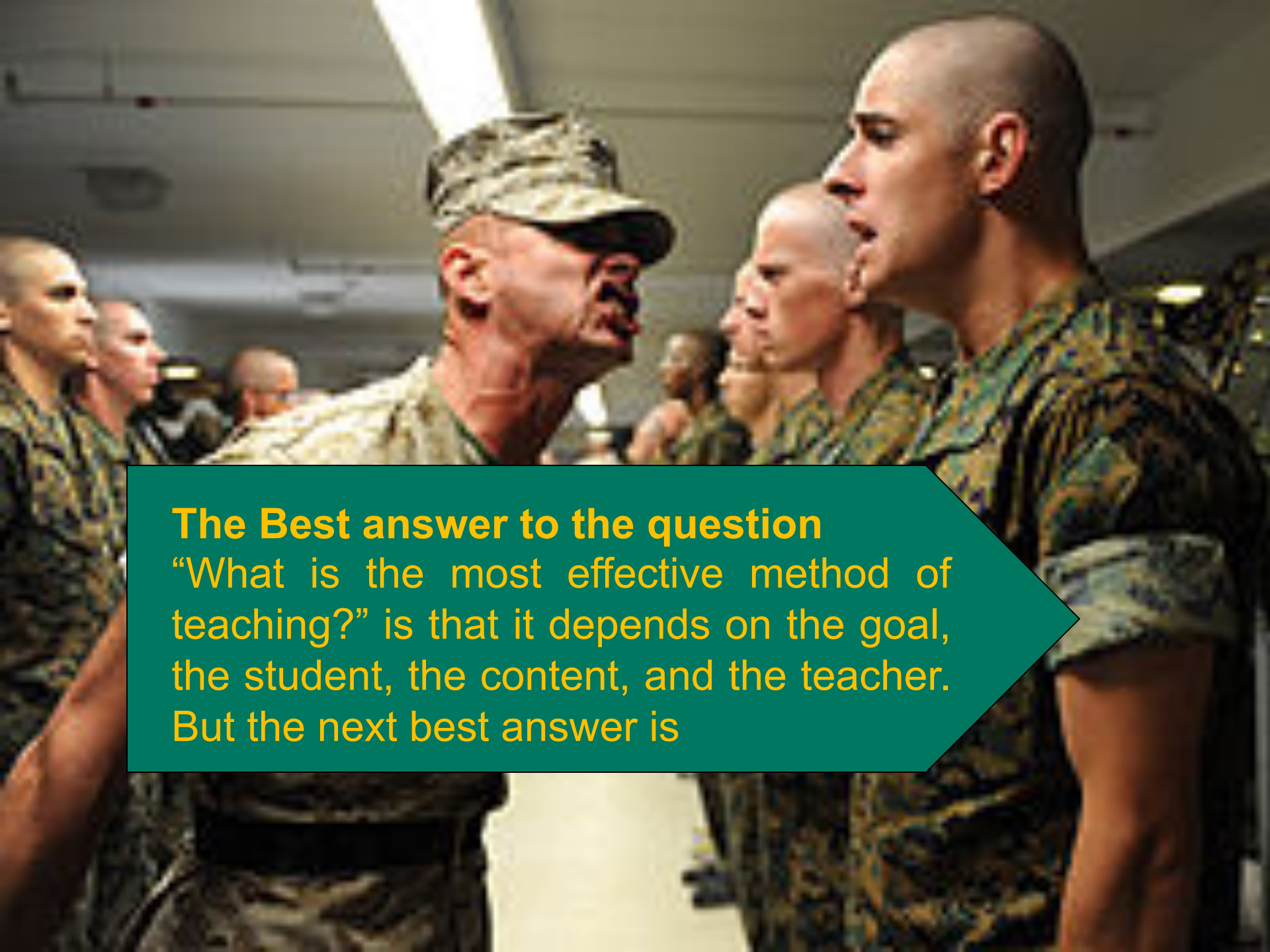
Active Learning

PEANUTS CHARLES M. SCHULZ
Z
(I'M AWAKE!!)
© 1981 United Feature Syndicate, Inc.
3-25
UNPREPARED, UNORGANIZED, UNSETTLED, UNCERTAIN, UNSURE, BUT AWAKE!
SCHULZ

Interaction with Others

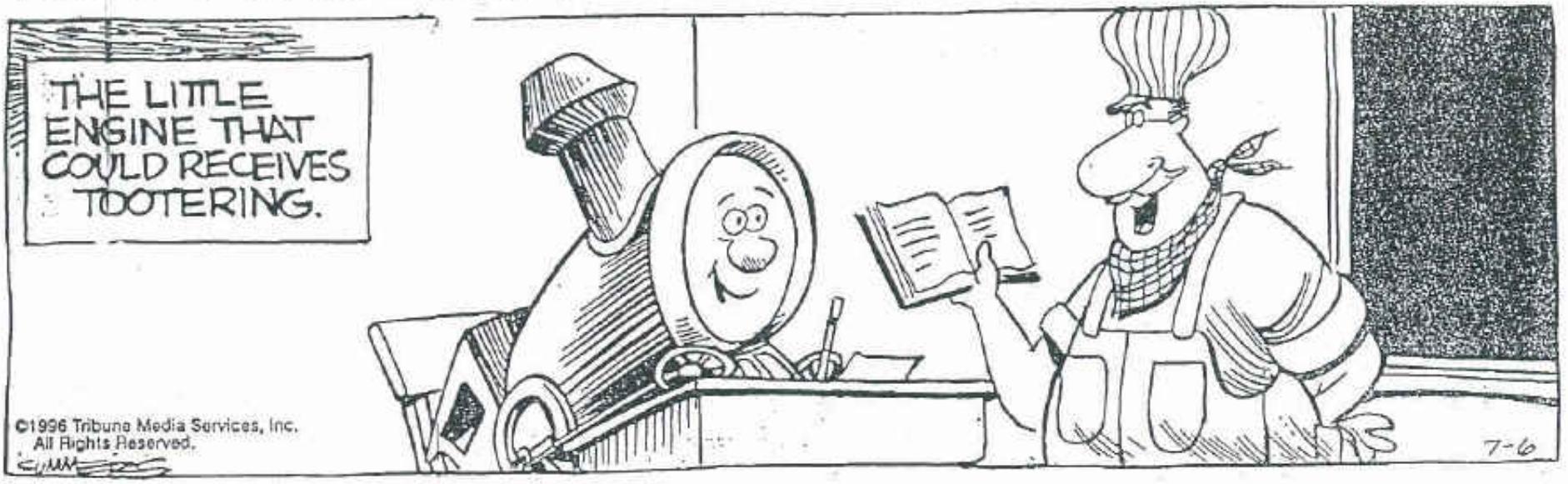


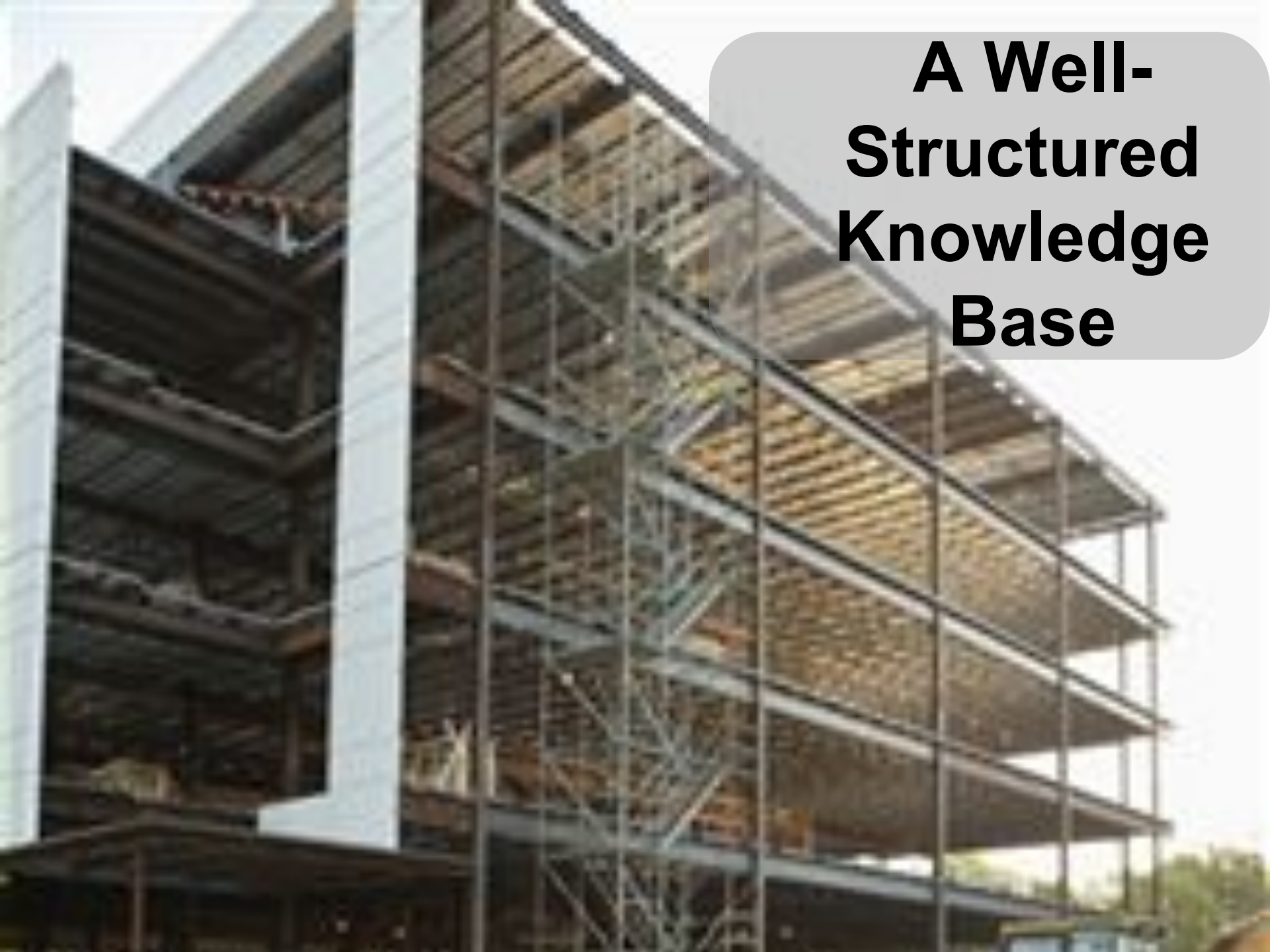
"I lift, you grab. ... Was that concept
just a little too complex, Carl?"


The Best answer to the question
"What is the most effective method of teaching?" is that it depends on the goal, the student, the content, and the teacher. But the next best answer is

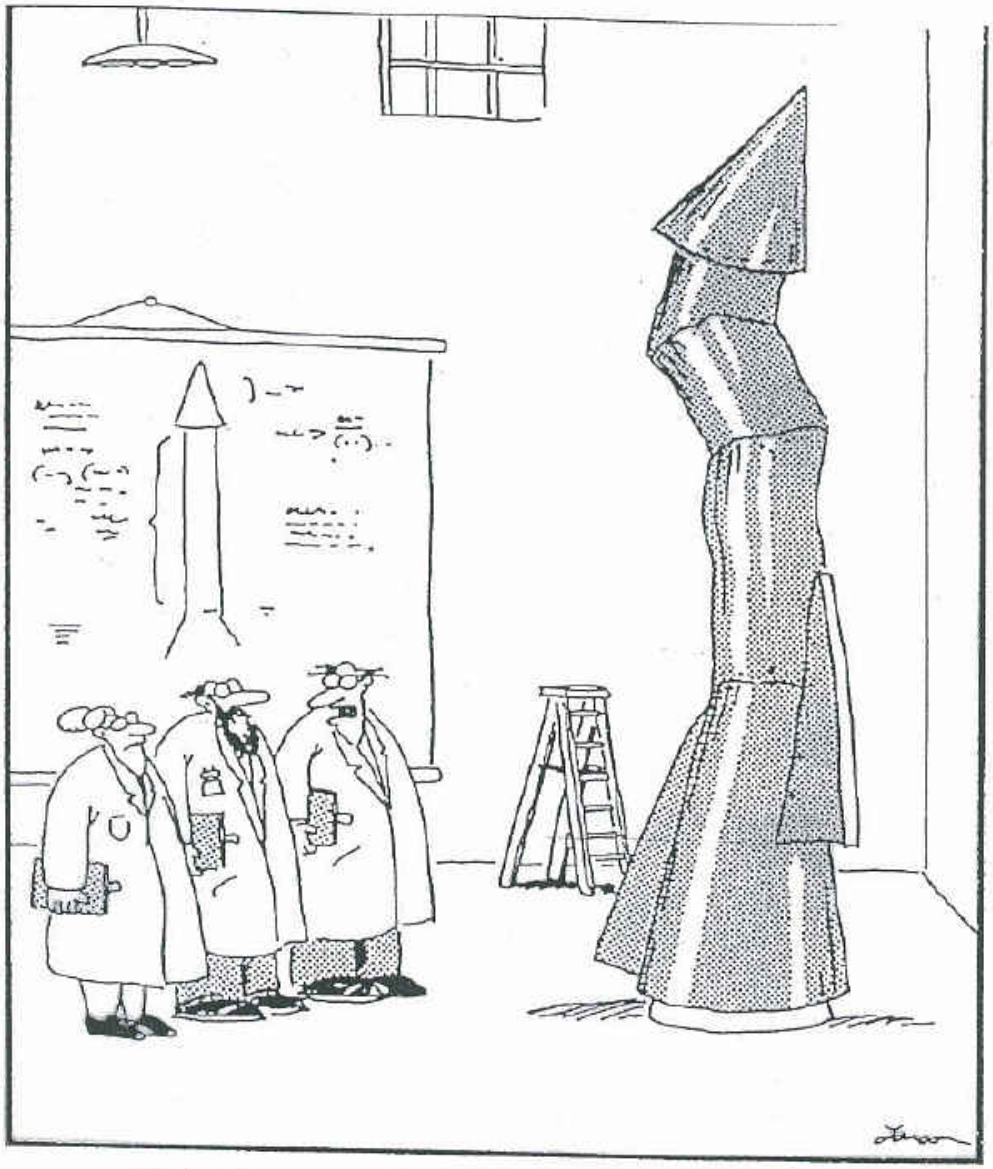
“Students teaching other students.”

BOUND & GAGGED by Dana Summers





A Well-Structured Knowledge Base



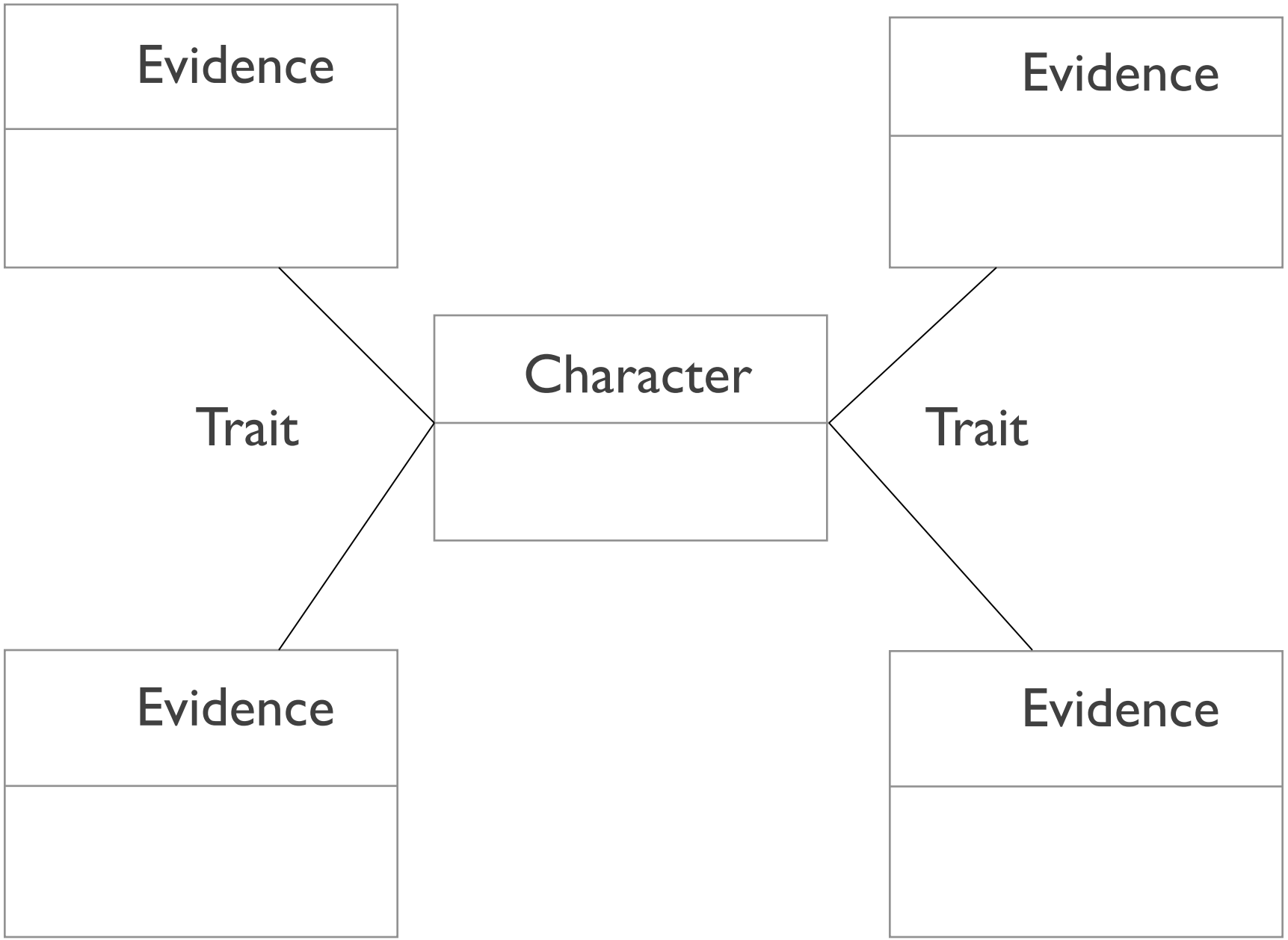
"It's time we face reality, my friends. ...
We're not exactly rocket scientists."

"Helping students to organize their knowledge is as important as the knowledge itself, since knowledge organization is likely to affect students' intellectual performance."

—Bransford, Brown, & Cocking

Three Sequenced Activities to Promote Deep Learning using graphic organizers

In-class or online JIGSAW based on a character trait graphic organizer completed as homework.
PRO-CON-CAVEAT GRID graphic organizer completed individually as homework and later as a team project. Teams compare their efforts.
DOUBLE-ENTRY JOURNAL graphic organizer completed as homework and compared within pairs. The sequence continues.


Evidence
Evidence
Character
Trait
Trait
Evidence
Evidence

Charlotte's Web:

Charlotte

Wilbur

Fern

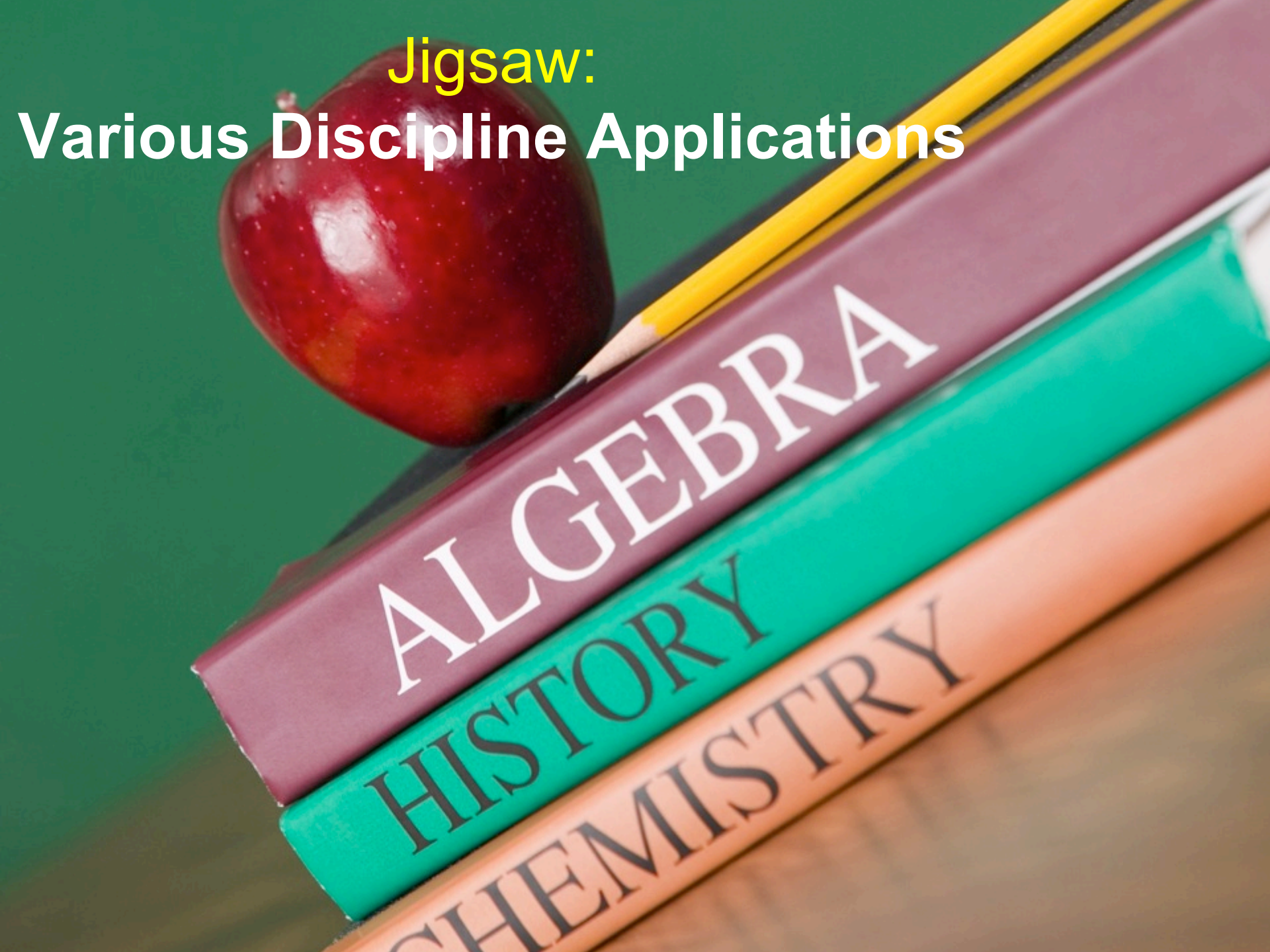
Templeton

CHARACTER:			
Trait:	**Trait:**	**Trait:**	**Trait:**
Textual Evidence:	**Textual Evidence:**	**Textual Evidence:**	**Textual Evidence:**

A DIFFERENT FORMAT FOR THE GRAPHIC ORGANIZER

The sequence promotes deep learning

Jigsaw:
Various Discipline Applications



Pro-Con-Caveat Grid

Proposition: Instructors should adopt group activities (pair-work, group work) in courses.

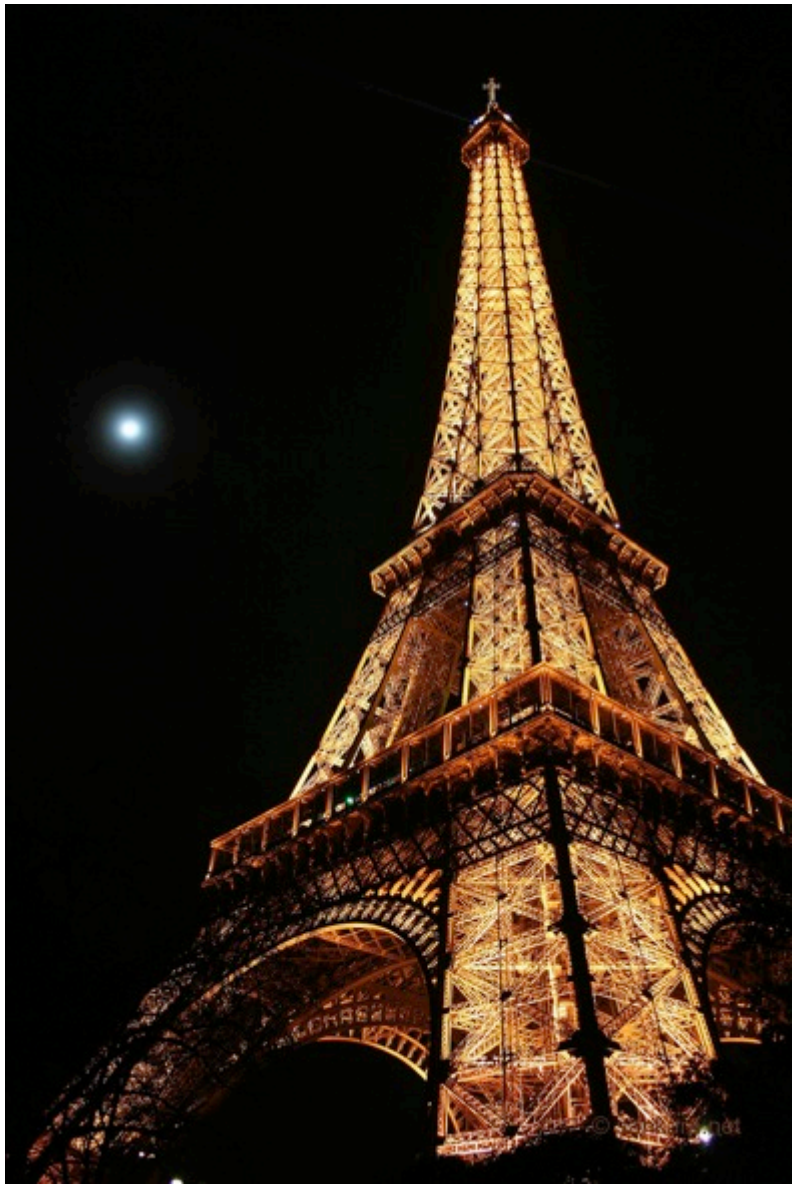
Pros	Cons	Caveats

Critical Review of Other Teams' Work

The sequence promotes deep learning

Bloom's Taxonomy of Educational Objectives

6. **Evaluation**
5. **Synthesis**
4. **Analysis**
3. **Application**
2. **Comprehension**
1. **Knowledge**



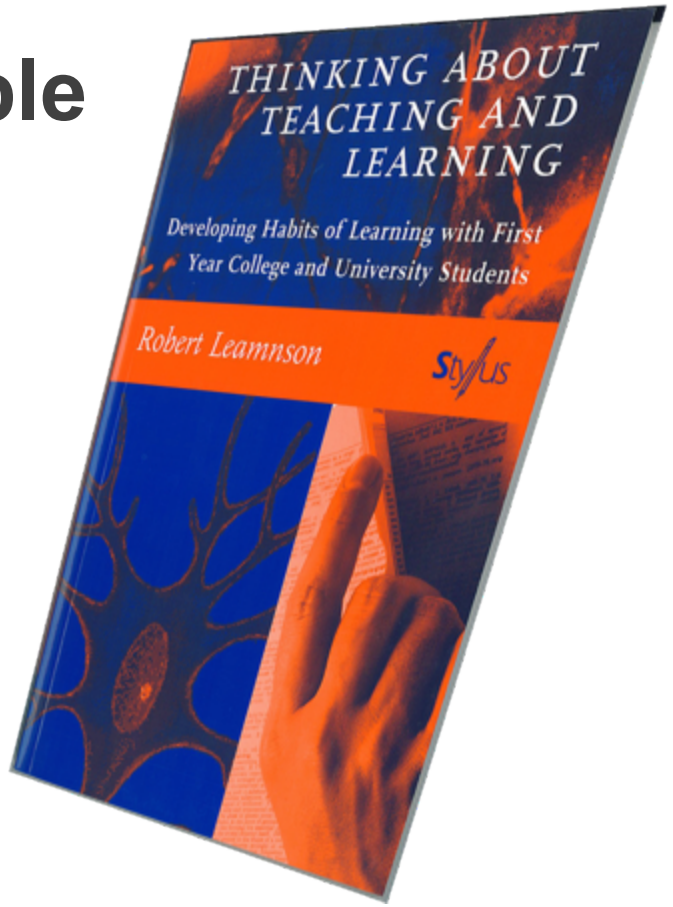
Double Entry Journal (condensed)

Critical Points	Response
"Learning Styles" have been over-emphasized in the research literature.	I would agree! I have never been comfortable with so many different typologies. I have taken courses in the Myers-Briggs instrument, 4-MAT, etc., and I have never understood the distinctions and values. Other than the truism that we should vary our teaching methods, the learning styles information has been of little practical value for me as a faculty developer and as a teacher.
Researchers examined a key question, "What does it take to be good at learning?"	A good question!
Metacognition--thinking about one's thinking--appears to lie at the heart of learning, and a predisposition toward it appears to be related to the learning environment rather than to learning styles.	No comment . . . . I'm eager to read further.
There are four general social orientations: academic, vocational, personal, and social.	Wow! As the author says, faculty resist such vocabulary. I resist more lists! How can "social" be part of the definition and part of the "stem"?

The sequence promotes deep learning

“Learning is defined as stabilizing, through repeated use, certain appropriate and desirable synapses in the brain”

—Leamnson, R. (2000).



Your Class Applications:

Jigsaw
Pro-Con-Caveat Grid
Double Entry Journal

Structure/Activity/Assignment	Ways I could Use It

The Keys to Deep Learning

Structured Problem-Solving/ Numbered Heads Together

Structured Problem Solving Activity

A Rapid Report-Out Method: Three Stay, One Stray

Gallery Walk

Learning Principle Number Three:

Metacognition

By Jeff MacNelly

Metacognition

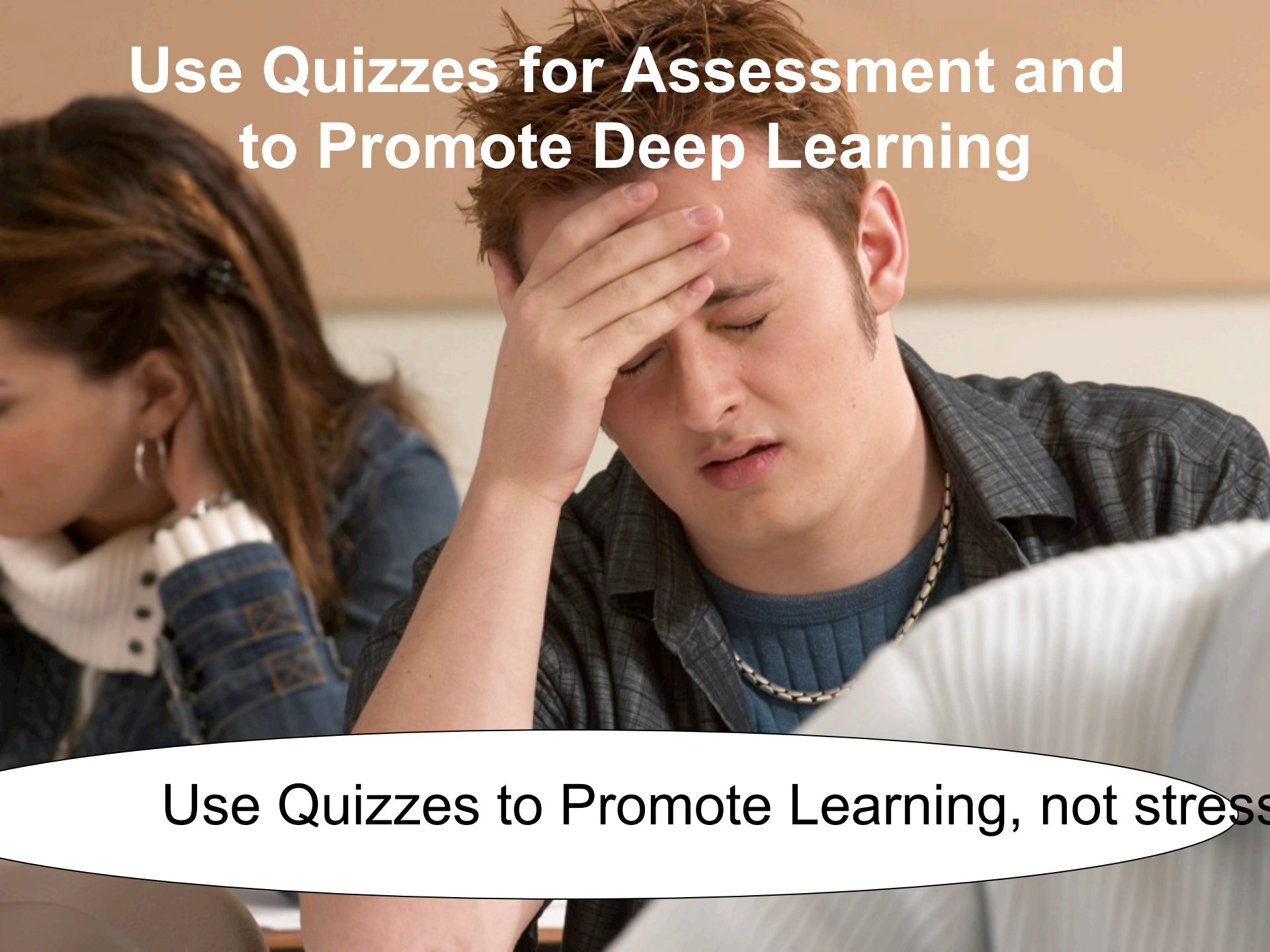
and Studying

Paired Problem-Solving

Punctuated Lectures

Minute Paper

Use Quizzes for Assessment and to Promote Deep Learning



Use Quizzes to Promote Learning, not stress

IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)

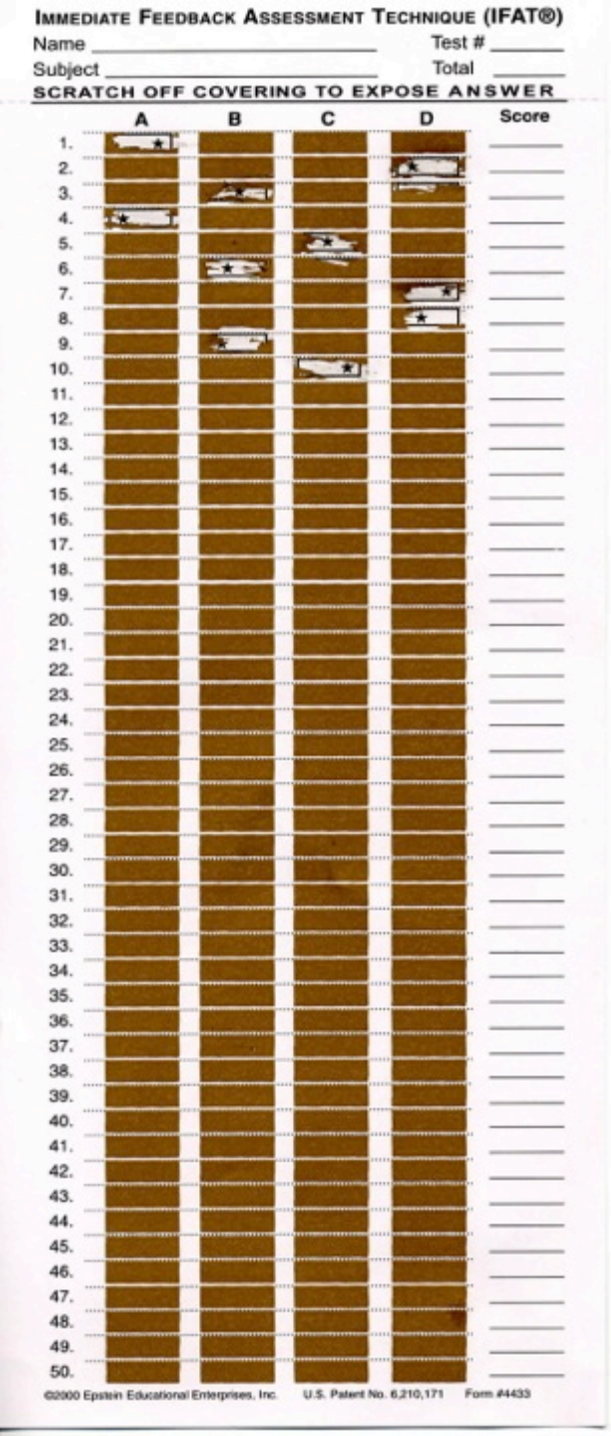
Name _____ Test # _____

Subject _____ Total _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

www.epsteineducation.com

	A	B	C	D	Score
1.					
2.					
3.					
4.					
5.					
6.					


IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IFAT®)

Name _____ Test # _____

Subject _____ Total _____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.	★				
2.				★	
3.		★			
4.	★				
5.			★		
6.		★			
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8.				★	
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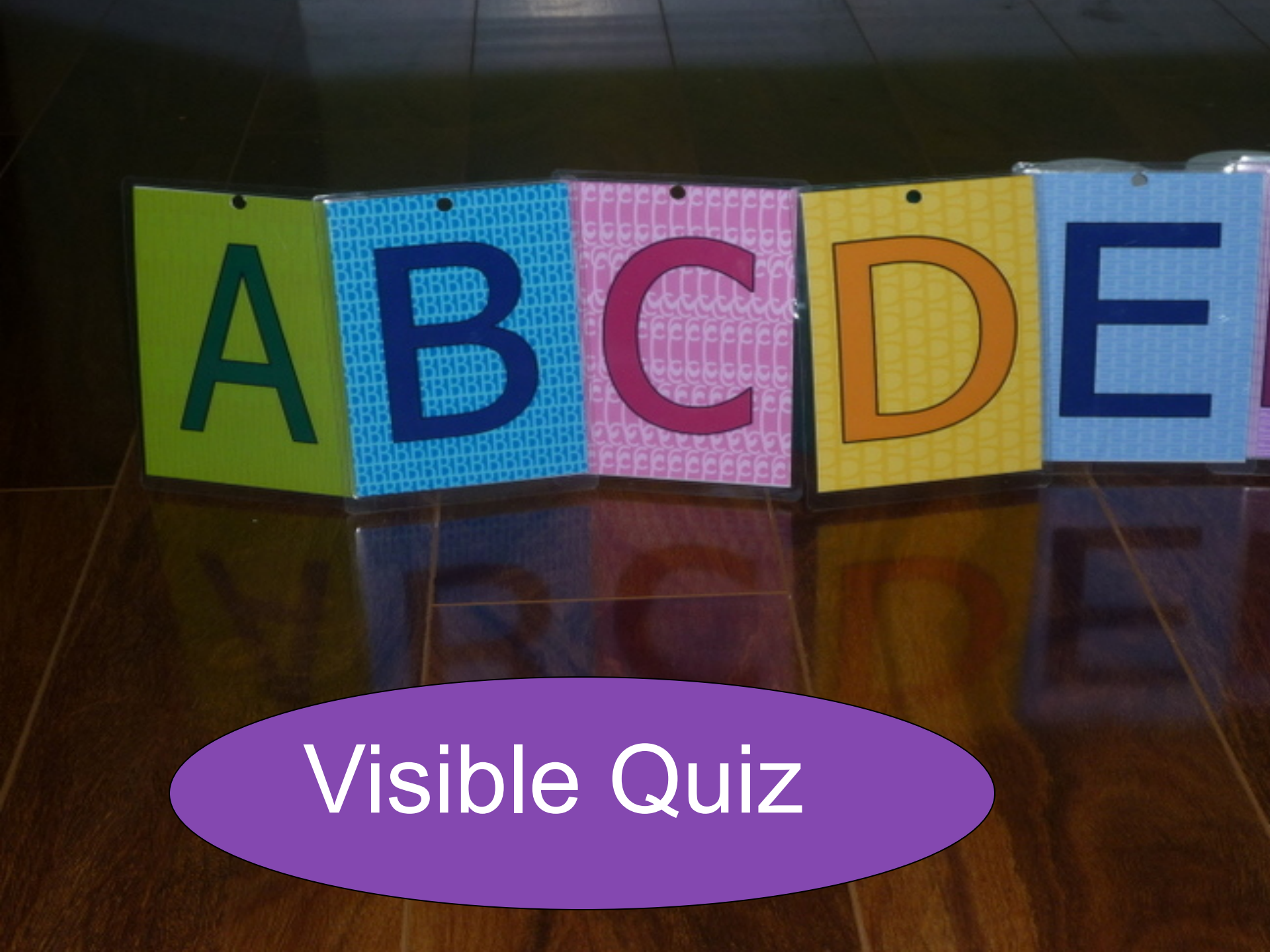
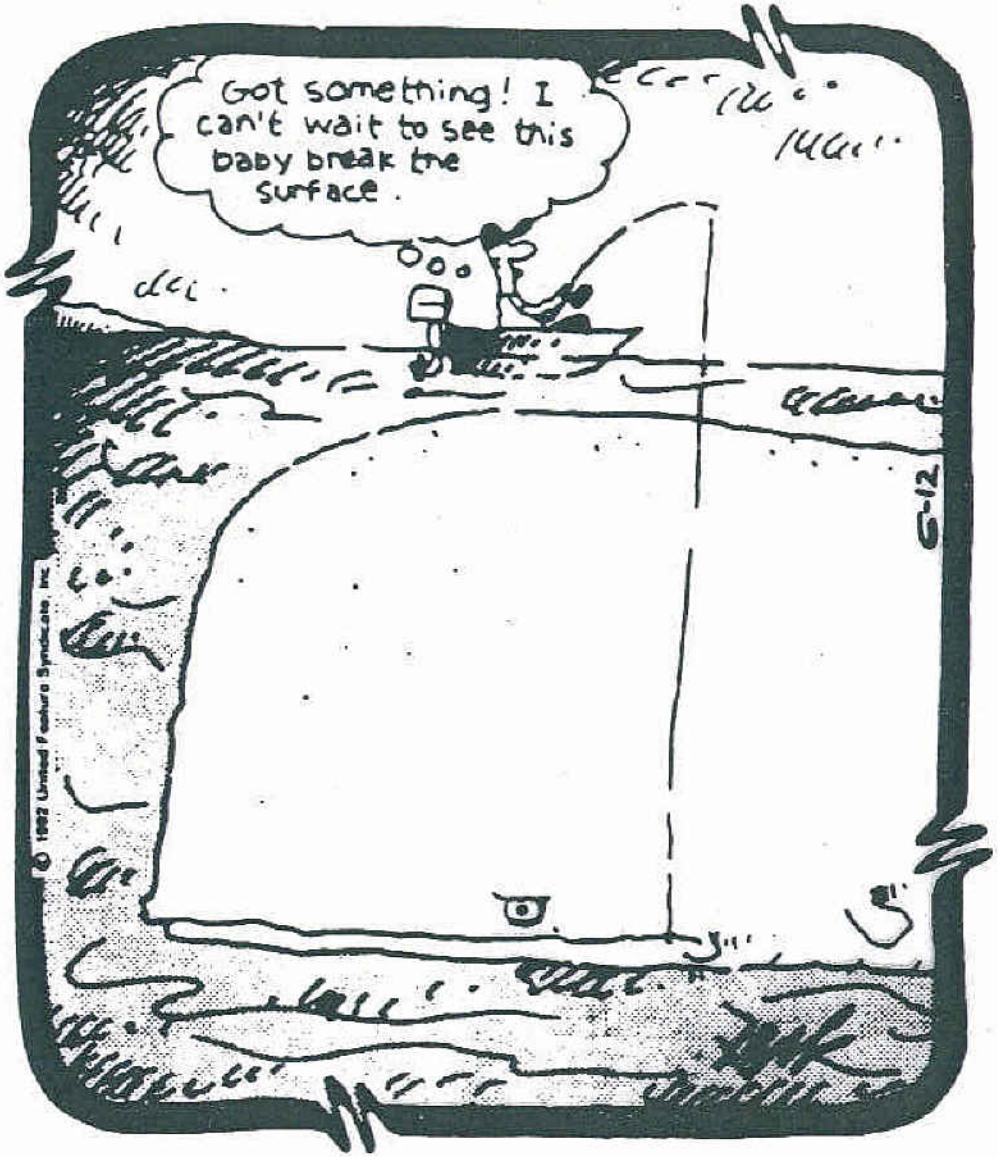
Scratch-Off Quizzes

Clicker Technology:
Use pair work.

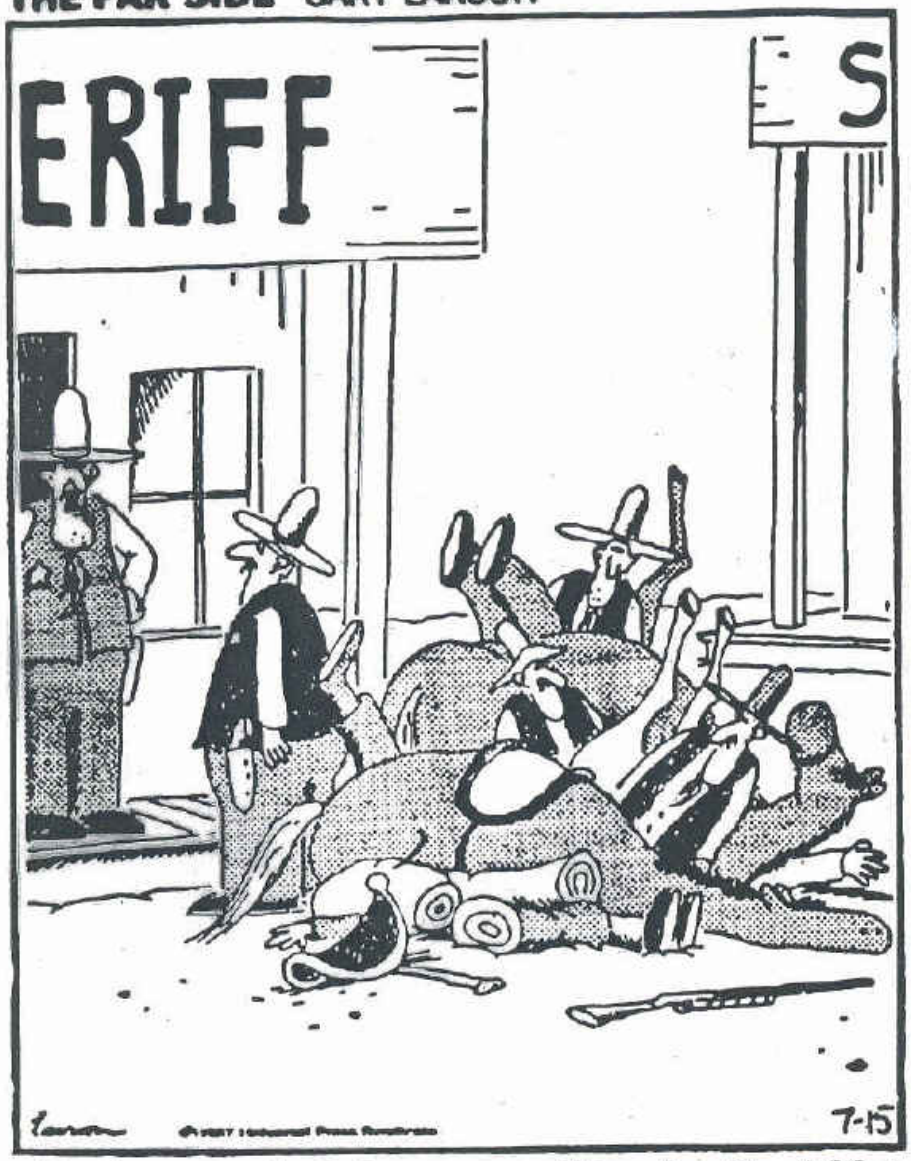

ABCDE
Visible Quiz

The Good News

OFF THE LEASH/W.B. PARK

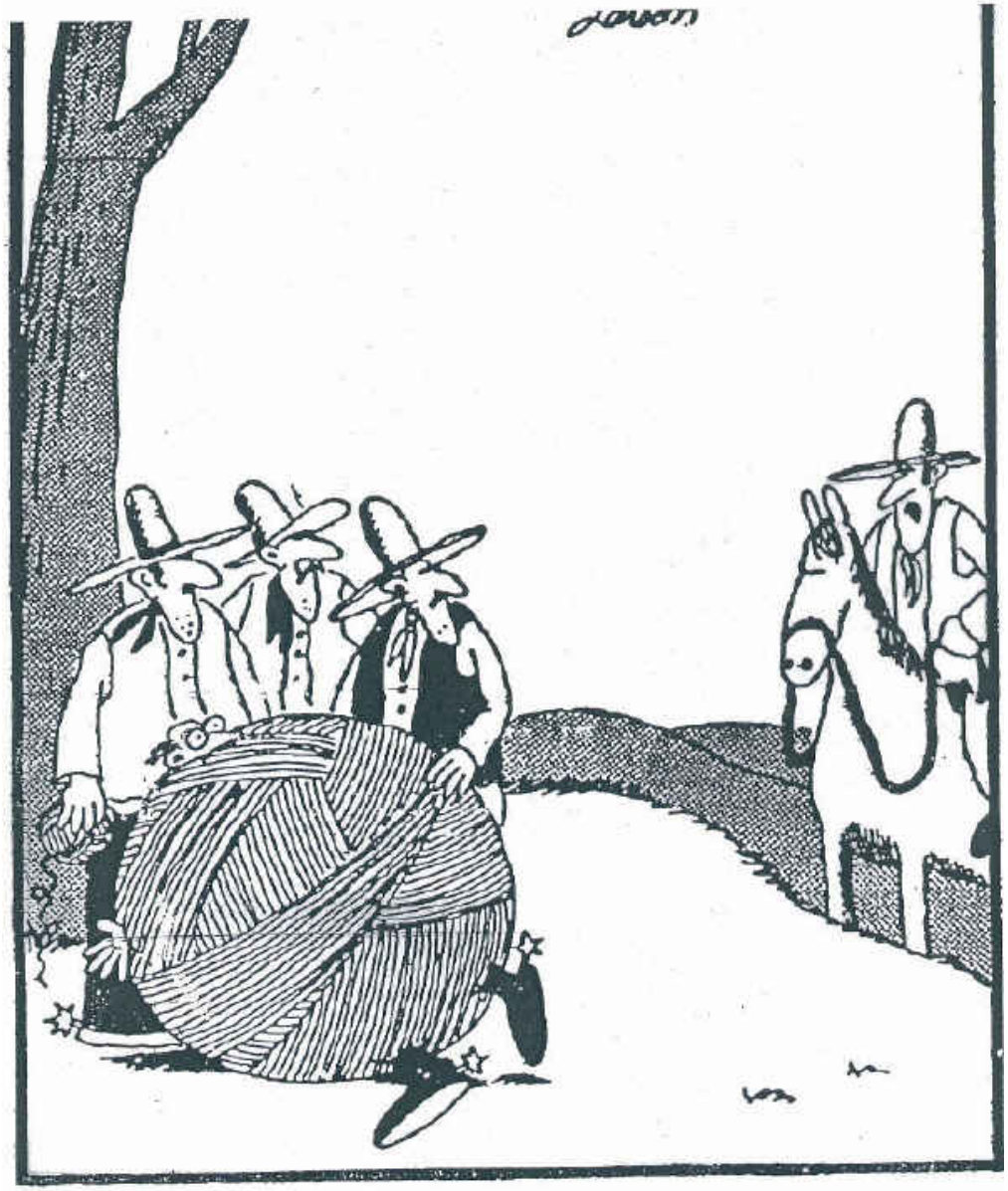


THE FAR SIDE GARY LARSON

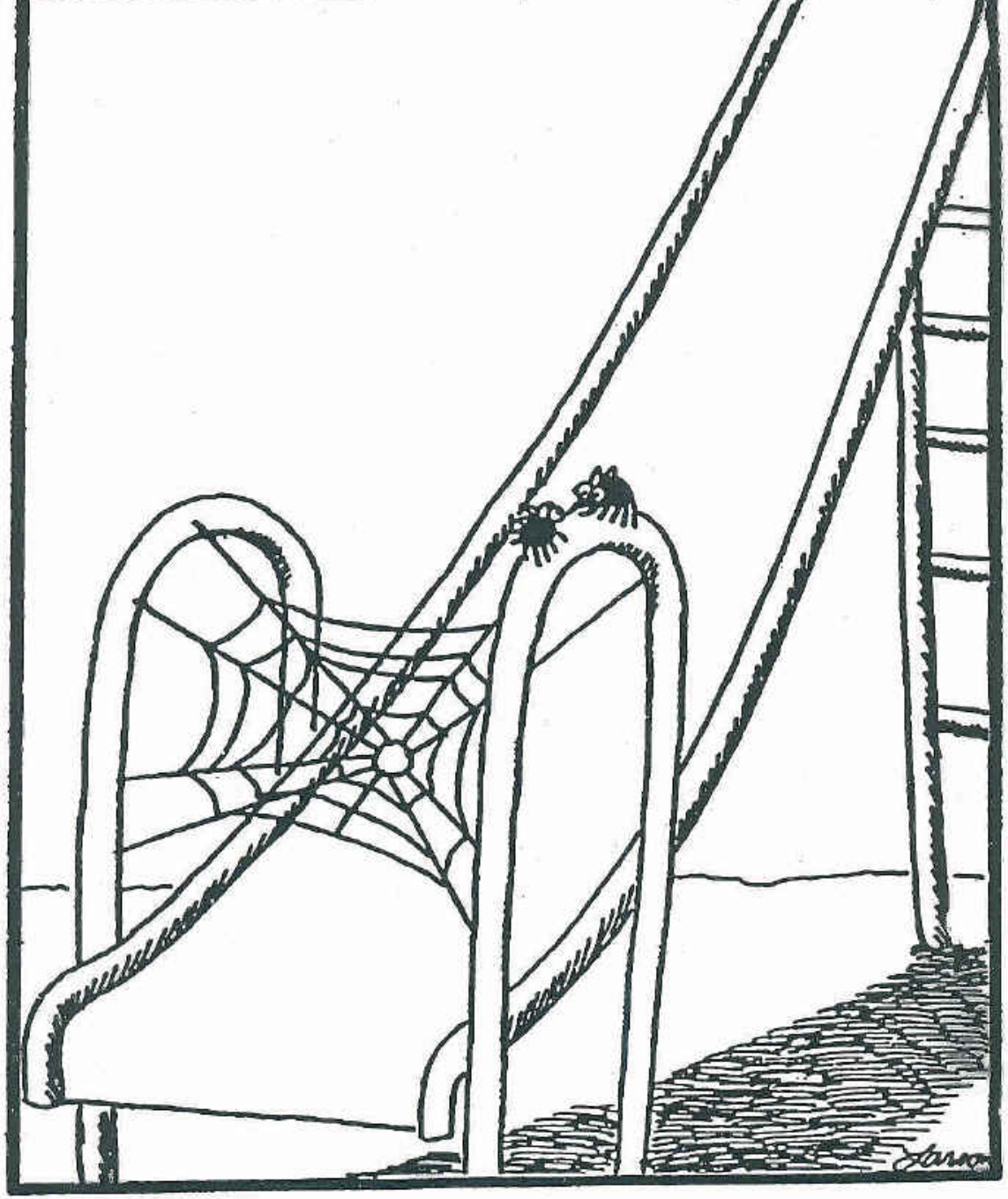


"And so you just threw everything together? Matthews, a posse is something you have to organize."

Now listen up! Were going to do this alphabetically!
damn
Larson



"Hang him, you idiots! Hang him! . . .
'String-him-up' is a
figure of speech!"



"If we pull this off, we'll eat like kings."

THE END

Disclosures (of Potential Conflicts of Interest)

"I have no disclosures of any financial support.

Barbara J. Millis

This program has been approved to meet the School of Medicine's promotion criteria for CME for Education.