

Active learning:
Six strategies you can try right now

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Agenda

- Introductions/warm-up
- Active/Cooperative learning
- Strategies
- Giving and receiving feedback
- Implementation and closure

Introductions

What do you teach?

Fun part of your break

- NAME

Collaborative learning?

Looking Forward

Define active learning

Engaging students to...

- think critically or creatively
- speak with a partner, in a small group, or with the entire class
- express ideas through writing
- explore personal attitudes and values
- give and receive feedback
- reflect upon the learning process

Active learning is facilitated...

- Small groups (2-3 students)
- Calculated assignment or assigned randomly
- Eliminate assumptions of prior knowledge
- Repetition
- Repetition

Cooperative Learning

- Active, Not Passive
- Talking, Not Silent
- Connected, Not Isolated

Instructional procedures

- Review
- Warm-Up
- Introduction
- Three concepts or ideas
- 15-20 min then exercise and repeat
- Closure

Basic elements

- Positive interdependence
- Individual accountability
- Promotive interaction
- Cooperative skills
- Group processing

Proper use of language

- Referring to “our” class and what “we” are doing

Skill development

1. Awkward
2. Phony
3. Mechanical
4. Integrated

Six strategies

- Opening question
- Think-pair-share
- Focused listing/Brainstorm
- Note check
- Question and answer pairs
- Two minute paper

Opening question:

- Take a moment to reflect on your experience with PowerPoint.
- Come up with a positive and a negative example.

Introductory think-pair-share

- Think of what you know about active learning strategies.
- Turn to a partner and share your knowledge.

Introductory think-pair-share

- Think of what you know about active learning strategies.
- Turn to a partner and share your knowledge.
- Open discussion

Six strategies

- ~~Opening question~~
- ~~Think-pair-share~~
- Focused listing/Brainstorm
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Focused listing

- Take out a sheet of paper and list as many characteristics of good lecturing as you can.

Brainstorm

- As a group, list the ways that students learn

Think-Pair-Share

- Think about how you might use active learning strategies in your lectures.
- Turn to your group and discuss.
- Share your findings



Note check

- Take a few minutes to compare notes with a partner:
 - Summarize the most important information.
 - Agree upon the top three methods of student learning

Six strategies

- ~~Opening question~~
- ~~Think-pair-share~~
- ~~Focused listing/Brainstorm~~
- ~~Note check~~
- Question and answer pairs
- Two minute paper

Question and answer pairs

- Take a minute to come up with one question.
- Which of these strategies have you tried or would you like to try in your own classes?

Two minute paper

Summarize the most important points regarding active learning.

Six strategies

- ~~Opening question~~
- ~~Think-pair-share~~
- ~~Focused listing/Brainstorm~~
- ~~Note check~~
- ~~Question and answer pairs~~
- ~~Two minute paper~~

Basic Elements

- Positive Interdependence
- Individual Accountability
- Promotive Interaction
- Cooperative Skills
- Group Processing

Advice for using cooperative learning

- Working groups are small
- Arrange group members knee-to-knee
- Go personal as well as professional
- Emphasize making each member a stronger individual
- Emphasize positive feedback
- Emphasize group celebrations

Group Roles

- Reader: Read through material slowly, carefully, with expression, so group members will never forget it for the rest of their lives
- Recorder: Write down all of group's good ideas, make sure there are three good possible right answers, and circle the one the group decides is most appropriate
- Checker for understanding: Require other members to demonstrate comprehension and help diagnose problems in understanding

Individual Accountability

- Task: Identify Three Strategies For Finding Answer
- Cooperation: One List From The Pair, Both Of You Agree, Both Able To Explain
- Evaluation: Criteria Referenced (All Members Able To Identify Three Strategies For Solving Problem)
- Expectations: Everyone Participates
- Intergroup Cooperation: If You Need Help, Ask The Group Next To You, They Will Be Glad To Help

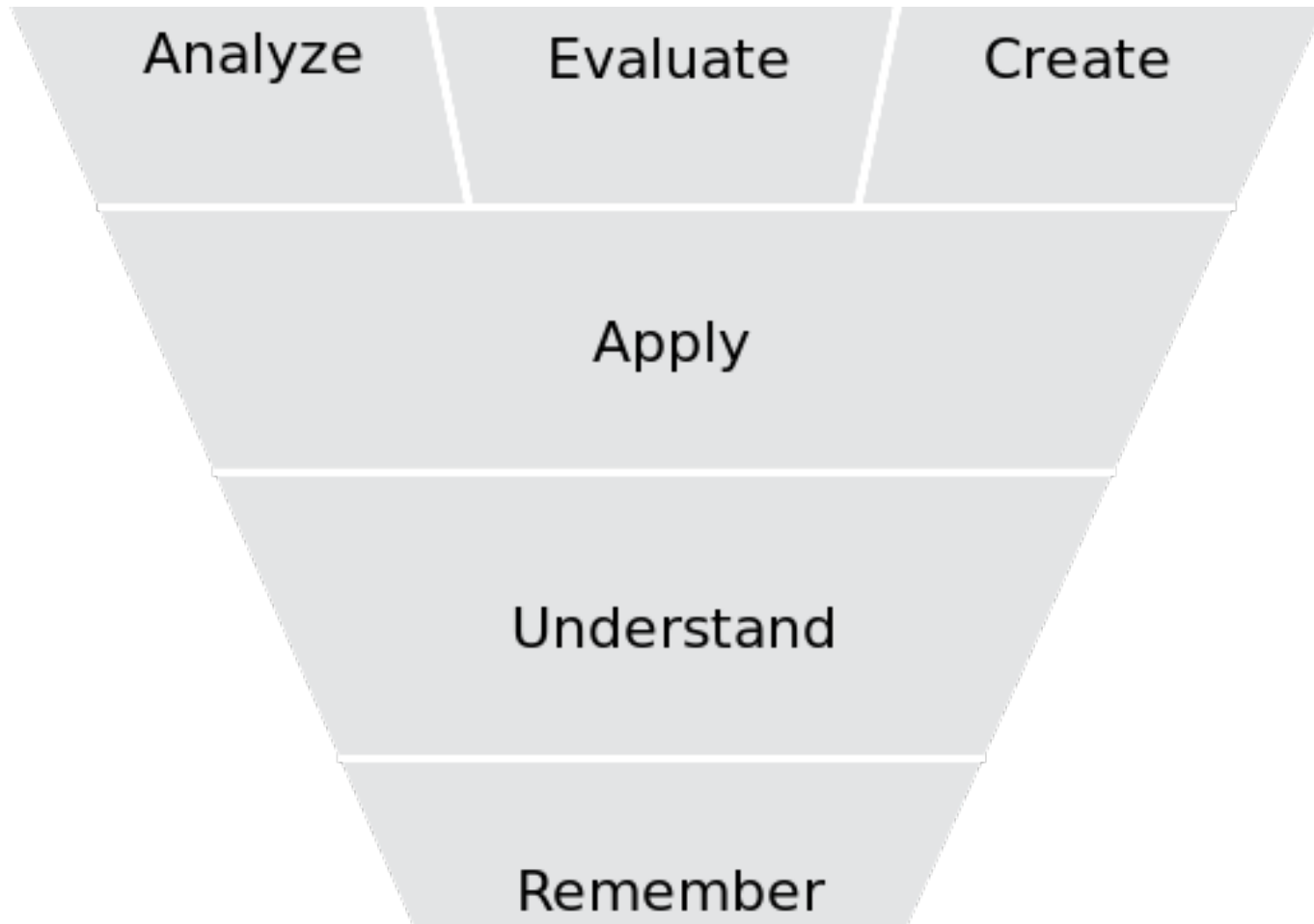
Session Closure & Conclusions

- What are the major themes of active learning?
- How would you implement this in your teaching?
- How can you help each other to develop methods and ideas?
- Celebration of hard work

Suggestions?/Conclusions

- Other ideas?
- Model, repeat, and repeat.
- Thank you!

Bloom's Taxonomy



Group Processing

- Name Three Things Your Group Did Well In Working Together
- Name One Thing Your Group Could Do Even Better Next Time

- There are six levels in the taxonomy, moving through the lowest order processes to the highest:
- **Knowledge**[\[edit\]](#)
- Exhibit memory of learned materials by recalling facts, terms, basic concepts and answers
- Knowledge of specifics - terminology, specific facts
- Knowledge of ways and means of dealing with specifics - conventions, trends and sequences, classifications and categories, criteria, methodology
- Knowledge of the universals and abstractions in a field - principles and generalizations, theories and structures
- Questions like: What are the health benefits of eating apples?
- **Comprehension**[\[edit\]](#)
- Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating the main ideas
- Translation
- Interpretation
- Extrapolation
- Questions like: Compare the health benefits of eating apples vs. oranges.
- **Application**[\[edit\]](#)
- Using new knowledge. Solve problems in new situations by applying acquired knowledge, facts, techniques and rules in a different way
- Questions like: Which kinds of apples are best for baking a pie, and why?
- **Analysis**[\[edit\]](#)
- Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations
- Analysis of elements
- Analysis of relationships
- Analysis of organizational principles
- Questions like: List four ways of serving foods made with apples and explain which ones have the highest health benefits. Provide references to support your statements.
- **Synthesis**[\[edit\]](#)
- Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions
- Production of a unique communication
- Production of a plan, or proposed set of operations
- Derivation of a set of abstract relations
- Questions like: Convert an "unhealthy" recipe for apple pie to a "healthy" recipe by replacing your choice of ingredients. Explain the health benefits of using the ingredients you chose vs. the original ones.
- **Evaluation**[\[edit\]](#)
- Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria
- Judgments in terms of internal evidence
- Judgments in terms of external criteria
- Questions like: Do you feel that serving apple pie for an after school snack for children is healthy?

Ground rules

- Give one sheet to each group of three
- Each time a one question is asked mark it off
- Must agree as a group

- <http://web.calstatela.edu/dept/chem/chem2/Active/>