

Collaborative and Active Teaching Techniques

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Session 3

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Collaborative and Active Learning Techniques: Session 3

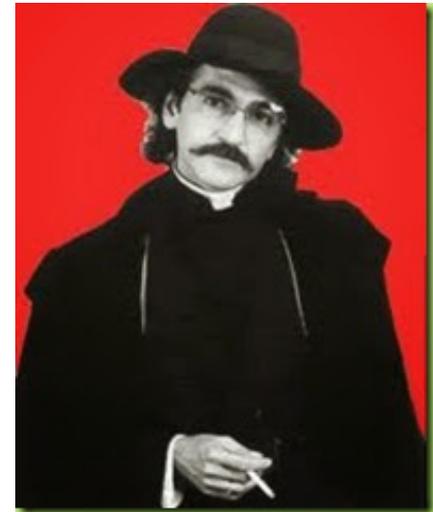
- ▶ <https://www.youtube.com/watch?v=kO8x8eoU3L4>

Agenda today:

A. Discussions on Session 2 techniques related experiences

B. Techniques for Session 3:

- ❖ Problem Solving
- ❖ Focus on Writing



Recap: Discussion techniques – session2

Reciprocal Teaching techniques:

1. Note-Taking Pairs
2. Learning Cell
3. Fish Bowl
4. Role Play
5. Jigsaw
6. Test-Taking Teams

Graphic Information Organizers

1. Affinity Grouping
2. Group Grid
3. Team Matrix
4. Sequence Chains
5. Word Webs

Three-step Interview Activity – Questions

1. Which technique?
2. How did the development/design/planning go?
3. How did the implementation go? Or what are your expectations
4. How did the assessment/evaluation go? Or what are your expectations

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Techniques for Problem Solving

What is a problem?

Problem solving is how we evolved as human beings – seeking knowledge to solve problems

What is problem solving? Do we use it? How do we teach students to do it?

Academically – Definition differs per discipline but in common:

- ▶ Variables to be identified
- ▶ Judgment that needs to be exercised
- ▶ Values that need to be considered
- ▶ Solutions, one or more to be deliberated

Problems can be: Straightforward in nature or insolvable (to be discussed infinitely spectrum)

Why is it important to use Problem Solving techniques?

- ▶ -Motivation – meaningful application of knowledge
- ▶ -Retention – connected to existing knowledge
- ▶ -learned knowledge will be applied in the future – useful
- ▶ -practice critical thinking skills – major skill to hone in higher education



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Problem Solving Techniques:

- ▶ TAPPS
- ▶ Send a Problem
- ▶ Case Study
- ▶ Structured Problem Solving



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Techniques for Problem Solving

#1. Think Aloud Pair Problem Solving (TAPPS)

This technique is a Low-stake way to introduce systematic problem solving. Instructor can build on with more substantial problem solving activities

Important: emphasis on process, not solving of problems

- ▶ Step 1: individual problem solving
- ▶ Step 2: in pairs: one solver other listener, change roles after first problem is solved. Solver describes her thinking process. Listener may ask clarification questions, but her first task is to encourage the solver to think aloud, not to come with solutions.
- ▶ Step 3: alternating roles

Keep in mind:

Most students will not have highly developed problem-solving skills

Students are possibly not comfortable with having their logic exposed. High level of trust is important – work in pairs – practice

Different speeds: have additional problems at hand for fast solvers

Good for after homework reading, prep for test

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Techniques for Problem Solving

#2. Send a Problem:

- ▶ 1st round: in small group – solve a given problem, send it on to the neighboring group, receive new problem
- ▶ 2nd round: solve 2nd problem in group, and send on to next group
- ▶ 3rd round: solve 3rd problem in group, and send on to next group
- ▶ 4th round : evaluation of groups' solutions & synthesis into your group's solution

Two stages: solving and evaluating

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Techniques for Problem Solving

#3. Case Study

Is a written, real-life scenario, that contains a dilemma and a key character, and provides a brief history. Preferred authors of case studies: instructors, since they know best what kind of problems are best for students to solve.

Advantages of use:

- ▶ Use of newly learned content: use of principles, theories and practice
- ▶ Invites critical reflection (higher level thinking skills - Application, Analysis level of Bloom's Taxonomy)
- ▶ Guides students to compare alternatives – using higher level thinking skills: analysis, synthesis and decision making

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Techniques for Problem Solving

#4. Structured Problem Solving

1. Identify the problem
2. Generate possible solutions
3. Evaluate and test the various solutions
4. Decide on a mutually acceptable solution
5. Implement the solution
6. Evaluate the solution

Two schools of thought on the problem solving process:

1.students figure out steps themselves, or 2.you provide students with the steps.

Above: The Dewey Six-Step Problem Solving Technique



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Recap:

- ❖ Why teach with collaborative and active learning techniques?
- ❖ What are some of the techniques we discussed?

Please, write on index card:

- ❖ One side – What was most helpful in this workshop series?
 - ❖ Other side – What areas could be improved?
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