

Metacognitive Activities Folder

Methods in Metacognition: Teaching Pedagogy and Learning by Example A SEPCHE Workshop at Neumann University February 7, 2013

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JIGSAW

PURPOSE:

The purpose of this metacognitive technique is to have students learn and collect multiple perspectives to then disseminate back to other students as “experts”.

DIRECTIONS:

Have students sit in random groups. They work on an activity, question, etc. and go around their group sharing answers. Each group has a separate topic or question. Students are to gain experience on the topic by listening to all those share within the group (perhaps have the students log others’ answers, etc.).

Next, have students arrange into NEW groups (with no other students they have previously shared with). They then share as “experts” to the other in their new group, on the topic originally addressed by their first group. All students at the NEW group now get to hear multiple perspectives across multiple topics.

The easiest way to facilitate the assignment of students to the two separate groups is to assign each student a letter for their first group (A, B, C, etc.) then a number (1, 2, 3, etc.). One would need to work out these groups in advance (to make sure there are no duplicate students between groups).

THINK/PAIR/SHARE

PURPOSE:

The purpose of this metacognitive technique is to have students think about their responses to a prompt, then share with a partner in a lower-risk situation before speaking in a larger group.

DIRECTIONS:

Provide students with a prompt or question they must answer or reflect upon. Give them a few minutes to formulate their own response. Then have students pair together (perhaps with a student sitting nearby) to share their reflections. Following, students share each other's responses aloud to the entire class. You may have each student report on the other student's response in the pair (instead of their own).

SYN-NAP

PURPOSE:

The purpose of this metacognitive technique is to provide students a break between learning segments (of information) for consolidation in the brain.

DIRECTIONS:

When presenting new content, do so in 20 minute increments with short breaks in between.

Scientific research shows that activity in the synapse can only be maintained for about 20 minutes at a time.

EXAMPLES:

- * Have students pass around a ball and answer questions about themselves.
- * Do a short visualization exercise with students.
- * Have students do a 2 min. free-write.
- * Have students get up and stretch.
- * Have students share with a partner for 1 min.

SOCRATIC CIRCLE

PURPOSE:

The purpose of the metacognitive technique is to allow to students to share ideas but also reflect on the process of group dynamics as students learn material.

DIRECTIONS:

Select a prompt, passage, or other material for all students to reflect upon.

Students are split into two, circular seated groups: one sit in a circle at center, the other sit as a circle surrounding; both facing the center of the room. The inner circle has 10 minutes or so to discuss the prompt while the outer circle observes. When the 10 minutes are up, the outer circle reports their observations. Then, the two circles switch and the process is repeated.

Instructors may ask outer circles to observe any particular topic or behavior of interest.

Instructors may also have the groups as an entire class wrap-up and reflect upon the prompt or process.

PICK THE EXPERT

PURPOSE: The purpose of this metacognitive technique is to provide an opportunity for students to identify and articulate key concepts regarding the target knowledge.

DIRECTIONS:

In groups of 5 or 6 have students create a statement, visual representation, concept map etc. about a topic or key point. Have them put their creation on a flip chart page. Be sure to tell them not to write their names on the paper. The instructor will prepare a flip chart ahead of time. Collect all of the flipcharts and post them randomly throughout the room. Mix in the instructor's flip chart with the others. Provide each student with two or three stick-on colored dots and direct them to place their dots on the flip charts that best illustrates the topic or concept. They can award all of their dots to the same flip chart, or split them up. Tally the dots and discuss the 3 top vote getters. Why did students pick each as their favorite? Share the one that the instructor did and look at comparisons and concepts.

MIND MAPPING

PURPOSE:

The purpose of this metacognitive technique is to visually map out the connection between an individual's way of connecting concepts.

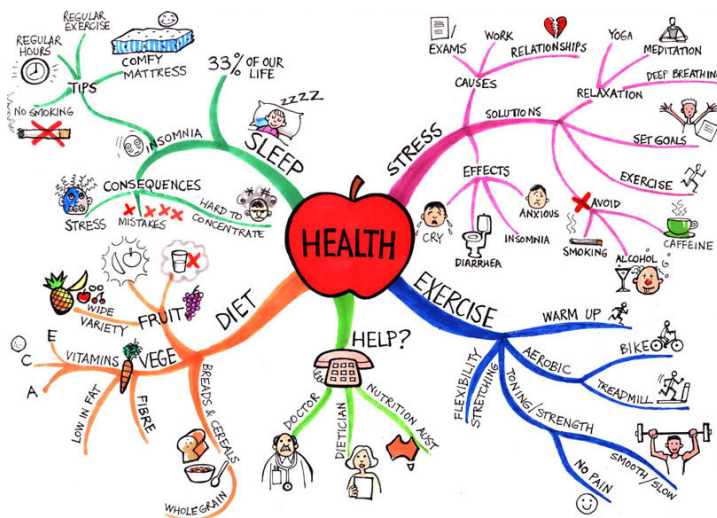
DIRECTIONS:

Provide students a list of concepts. Ask students to arrange the concepts and connect them in a way that reflects their own individual thinking and associations between the terms. Students can draw a map of the concepts, connecting them by lines or other visual presentation.

Instructors may wish to only provide one concept and ask students to indicate other concepts they associate or think of on their own.

Instructors may need to provide large sheets of paper for students to draw out the array.

EXAMPLE (learningfundamentals.com):



STIR THE CLASS

PURPOSE:

The purpose of this metacognitive technique is to provide multiple layers of discussions between groups of students in order to facilitate the learning of multiple perspectives and group dynamics.

DIRECTIONS:

Have students sit in home groups of 3, with each learner being assigned a number (1-3). The Instructor asks a question and the learners confer on the answer (and decides on an answer) within each home group.

The Instructor then calls a learner's number and tells them where to move. For example, "Number 3's move to the group on your left." All students assigned a number 3 would move to the group on the left and present the answer their home group decided upon. Students discuss. Any disagreements are brought to the class for discussion and resolution.

TRANSFER JOURNAL

PURPOSE:

Students fill out the chart for basic concepts learned in class to apply/transfer those concepts to new ideas or areas.

DIRECTIONS:

Have students fill out the following chart for a concept or multiple concepts.

IDEA	INTERPRETATION	CONNECTION	TRANSFER	INSIGHTS/ REFLECTION
What is the big idea? (copy phrases/sentences exactly from text)	What does it mean? (write in own words)	How can you connect the idea to another subject?	How can you transfer or apply the idea to your life?	What insight or reflection do you have from the idea?

TICKET IN THE DOOR & TICKET TO LEAVE

PURPOSE:

The purpose of this metacognitive technique is to connect ideas from the last class to the present class. Also, asking students to summarize what they just learned (present class) assists in memory rehearsal and consolidation.

DIRECTIONS:

Ticket in: As each student enters the classroom, they must report to the instructor one thing they recall/learned from the last class, as admission to today's class. Instructors may create variations of the "entrance question".

Ticket out: At the end of class, students must summarize what they've learned that day and present to the class. Students can recap and reflect to help consolidate memory. Instructors may again provide specific prompts for reflection/summarization.

Students can also accomplish this in groups. Another variation has each successive reflection build on the previous (or in the least, a student can not explicitly repeat what another has stated).

STOP & SWITCH

PURPOSE:

The purpose of this metacognitive technique is to allow students to think beyond and elaborate on what others have shared. It also allows students to then assimilate ideas and summarize.

DIRECTIONS:

At the end of a class, ask students to write down five things they have learned (2 minutes).

Second, ask them to pair with a partner; tell one student to talk for 2 more minutes about what he/she has learned. At the end of those two minutes, call for a STOP/SWITCH. The other student now talks for 2 minutes, but is not permitted to repeat anything that has been stated by his/her partner. After those 2 minutes, call for a STOP/SWITCH.

Begin the cycle again with new partners and the same rules (not repeating what another student has said) but now for only one minute. Do the same for the other partner for one minute (call STOP/SWITCH).

Finally, at the end of those two, one minute intervals, ask each pair to now take 30 seconds to write one sentence that summarizes what they have learned (collectively). Share the findings as a whole class.

WHAT'S THE STORY?

PURPOSE:

The purpose of this metacognitive technique is to connect themes or ideas to a meaningful story that can help students remember (mnemonic technique).

DIRECTIONS:

Have students create a story using the lesson content. Each student adds one sentence to the story adding an element or key term/concept.

Write down or record the story for students to use as a study tool.

EXTRA TOPIC

SHAPE SHIFTING

PURPOSE:

The purpose of this metacognitive technique is for students to visually conceptualize a topic, and potentially associate it with a visual shape (to assist in memory).

DIRECTIONS:

Ask students to draw a shape on a piece of paper (any shape of their choosing). The students should then try to fill the shape with as much information as they can about the given topic.

Students can hang their shapes on the wall for other students to walk around and see.

MORE RESOURCES

- ◉ *Applying the science of learning to the university and beyond: Teaching for long-term retention and transfer*; Halpern & Hake
- ◉ *Building faculty capacity through the learning sciences*; Moy, O'Sullivan, Terlecki & Jernstedt
- ◉ *Classroom management techniques: A handbook for college teachers*; Angelo & Cross
- ◉ *Encouraging metacognition: Supporting learners through metacognitive teaching strategies*; Kolencik & Hillwig.
- ◉ *How learning works: Seven research-based principles for smart teaching*; Ambrose, Bridges, DiPietro, Lovett, & Norman
- ◉ *How people learn: Brain, mind, experience and school*; Bransford, Brown, & Cocking
- ◉ *Make it stick: The science of successful learning*; Brown, Roediger, & McDaniel
- ◉ *Student engagement techniques: A handbook for college faculty*; Barkley.

Also see:

- ◉ Vanderbilt Center for Teaching Site-- How People Learn:
<http://cft.vanderbilt.edu/guides-sub-pages/how-people-learn/>
- ◉ Carnegie Mellon Principles of Learning:
<http://www.cmu.edu/teaching/principles/learning.html> and Problem Solving:
<http://www.cmu.edu/teaching/solveproblem/step1-problem/index.html>
- ◉ Cornell **Active Teaching Strategies**: <http://cte.cornell.edu/teaching-ideas/engaging-students/collaborative-learning.html> and Assessment:
<http://www.cte.cornell.edu/teaching-ideas/assessing-student-learning/index.html>
- ◉ Columbia Active Learning Resources:
<http://www.columbia.edu/cu/tat/pdfs/active%20learning.pdf> and Archive of Handouts:
<http://teachingcenter.wikischolars.columbia.edu/Teaching+Center+handouts+archive>
- ◉ Unpublished work by Eison (in press)