Meeting the Challenges of Providing Effective Tutoring and Study Groups: Metacognition is the Key!

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Reflection Questions

• What’s the difference, if any, between teaching and tutoring?

• What do you think your students want you to do in a tutoring/mentoring session?

• What do you think your students need you to do in a tutoring session?
Help Students Make the Transition from Passive to Active Learners!

Help students identify and close “the gap”

Passive learners \(\rightarrow\) current performance

MIND THE GAP

Active learners \(\rightarrow\) desired performance
Turn Your Students into Expert Learners!

- Show them **how** to learn by teaching them metacognitive learning strategies

- Motivate them to *use* the learning strategies
Desired outcomes

• We will identify challenges faced by tutors
• We will understand the role of metacognition in helping students develop independence
• We will have concrete strategies that will increase our effectiveness as tutors
• Our students will take more responsibility for their own learning
• We will view students differently
• We and our students will have a more satisfying experience!
Two More Reflection Questions

• What’s the difference, if any, between *studying and learning*?

• For what task would you work harder?
  A. Make an A on an upcoming test
  B. Teach a review session for an upcoming test
To Help Your Students Excel

• Help them stay in *learn* mode, not *study* mode

• Help them study as if they have to *teach* the material, not just make an A on the test
The Story of Three Students

• Travis, junior psychology student
  47, 52, 82, 86  B in course

• Dana, first year physics student
  80, 54, 91, 97, 90 (final)  A in course

• Joshua, first year chem student
  68, 50, 50, 87, 87, 97 (final)  A in course
Christopher Columbus Discovering America

WITH HOCKED GEMS FINANCING HIM/ OUR HERO BRAVELY DEFIED ALL SCORNFUL LAUGHTER/ THAT TRIED TO PREVENT HIS SCHEME/ YOUR EYES DECEIVE/ HE HAD SAID/ AN EGG/ NOT A TABLE/ CORRECTLY TYPIFIES THIS UNEXPLORED PLANET/ NOW THREE STURDY SISTERS SOUGHT PROOF/ FORGING ALONG SOMETIMES THROUGH CALM VASTNESS/ YET MORE OFTEN OVER TURBULENT PEAKS AND VALLEYS/ DAYS BECAME WEEKS/ AS MANY DOUBTERS SPREAD FEARFUL RUMORS ABOUT THE EDGE/ AT LAST/ FROM NOWHERE/ WELCOME WINGED CREATURES APPEARED/ SIGNIFYING MOMENTOUS SUCCESS.

Anticipatory set CAN interfere!

Let’s look at the car on the next slide...
How’d They Do It?

They became expert, *strategic* learners by using *metacognition*!

They studied to LEARN, not just to make the grade!
Metacognition*

The ability to:

• think about one’s own thinking

• **be consciously aware of oneself as a problem solver**

• monitor and control one’s mental processing (e.g. “Am I understanding this material?”)

• accurately judge one’s level of learning

Counting Vowels in 45 seconds

A E I O U

How accurate are you?
Dollar Bill
Dice
Tricycle
Four-leaf Clover
Hand
Six-Pack
Seven-Up
Octopus

Cat Lives
Bowling Pins
Football Team
Dozen Eggs
Unlucky Friday
Valentine’s Day
Quarter Hour
How many *words or phrases* do you remember?
Let’s look at the words again...

What are they arranged according to?
Dollar Bill
Dice
Tricycle
Four-leaf Clover
Hand
Six-Pack
Seven-Up
Octopus
Cat Lives
Bowling Pins
Football Team
Dozen Eggs
Unlucky Friday
Valentine’s Day
Quarter Hour
NOW, how many words or phrases do you remember?
What were two major differences between the first attempt and the second attempt?
1. We knew what the task was

2. We knew how the information was organized
Turning Your Students into Efficient, Expert Learners

- Have them constantly ask “why” and “what if” questions
- Have them test their understanding by verbalizing or writing about concepts, and practicing retrieval of information during the tutoring session
- Have them move their activities higher on the *Bloom’s taxonomy* scale by comparing and contrasting, thinking of analogies, thinking of new pathways, etc.
Bloom’s Taxonomy

Anderson & Krathwohl, 2001
Bloom’s Taxonomy

Remembering

Understanding

Applying

Analyzing

Evaluating

Creating

- Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure.
- Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
- Carrying out or using a procedure through executing, or implementing.
- Retrieving, recognizing, and recalling relevant knowledge from long-term memory.
- Making judgments based on criteria and standards through checking and critiquing.

This pyramid depicts the different levels of thinking we use when learning. Notice how each level builds on the foundation that precedes it. It is required that we learn the lower levels before we can effectively use the skills above.
At what level of Bloom’s did you have to operate to make A’s or B’s in high school?

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation
At what level of Bloom’s do you think you’ll need to be to make A’s in college?

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation
How do we teach students to move higher on Bloom’s Taxonomy?

Teach them the Study Cycle*

*adapted from Frank Christ’s PLRS system
**The Study Cycle**

1. **Set a Goal**
   * (1-2 min)
   * Decide what you want to accomplish in your study session

2. **Study with Focus**
   * (30-50 min)
   * Interact with material- organize, concept map, summarize, process, re-read, fill-in notes, reflect, etc.

3. **Reward Yourself**
   * (10-15 min)
   * Take a break– call a friend, play a short game, get a snack

4. **Review**
   * (5 min)
   * Go over what you just studied

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*Intense Study Sessions*

- **Preview before class** – Skim the chapter, note headings and boldface words, review summaries and chapter objectives, and come up with questions you’d like the lecture to answer for you.

- **Attend class** – GO TO CLASS! Answer and ask questions and take meaningful notes.

- **Review after class** – As soon after class as possible, read notes, fill in gaps and note any questions.

- **Study** – Repetition is the key. Ask questions such as ‘why’, ‘how’, and ‘what if’.
  - **Intense Study Sessions** - 3-5 short study sessions per day
  - **Weekend Review** – Read notes and material from the week to make connections

- **Assess your Learning** – Periodically perform reality checks
  - Am I using study methods that are effective?
  - Do I understand the material enough to teach it to others?

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Center for Academic Success
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Why are metacognitive strategies so important?

*They empower students to learn, even after they’ve been made to believe they can’t!*

*They help students develop a new mindset*
Email from Joshua in Spring 2011

“...Personally, I am not so good at chemistry and unfortunately, at this point my grade for that class is reflecting exactly that. I am emailing you inquiring about a possibility of you tutoring me. I can even pay you for tutoring. I need any and all help I can get at this point. I apologize for the inconvenience. ”

April 6, 2011

“I made a 68, 50, 50, 87, 87, and a 97 on my final. I ended up earning a 90 in the course, but I started with a 60. I think what I did different was make sidenotes in each chapter and as I progressed onto the next chapter I was able to refer to these notes. I would say that in chemistry everything builds from the previous topic”

May 13, 2011

Semester GPA: 3.8
Great Strategies for Helping Students LEARN!

- Establish expectations and ground rules
- Help students set goals and timelines
  *come prepared, and be ready to learn!*
- Attribute failures to correctable causes
- Attribute success to effective strategies
- Encourage students to form study groups
Help Your Students Develop the Right Mindset


Mindset* is Important!

- **Fixed Intelligence Mindset**
  Intelligence is static
  You have a certain amount of it

- **Growth Intelligence Mindset**
  Intelligence can be developed
  You can grow it with actions

New York: Random House Publishing
### Responses to Many Situations are Based on Mindset

<table>
<thead>
<tr>
<th></th>
<th>Fixed Intelligence Mindset Response</th>
<th>Growth Intelligence Mindset Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Challenges</strong></td>
<td>Avoid</td>
<td>Embrace</td>
</tr>
<tr>
<td><strong>Obstacles</strong></td>
<td>Give up easily</td>
<td>Persist</td>
</tr>
<tr>
<td><strong>Tasks requiring effort</strong></td>
<td>Fruitless to Try</td>
<td>Path to mastery</td>
</tr>
<tr>
<td><strong>Criticism</strong></td>
<td>Ignore it</td>
<td>Learn from it</td>
</tr>
<tr>
<td><strong>Success of Others</strong></td>
<td>Threatening</td>
<td>Inspirational</td>
</tr>
</tbody>
</table>
Learned Helplessness*

Based on prior experience, the feeling that no amount of effort will bring success

Destroys motivation to attempt a task

*Martin Seligman and Steven F. Maier
Solving Anagrams

http://www.youtube.com/watch?v=MTqBP-x3yR0
The Cure for Learned Helplessness

• Understanding the student’s “explanatory style”

• Changing the negative, self-destructive things students say to themselves when they fail

• Making the new statements a permanent part of their explanatory style

• Recognizing that perception of ability has the most influence on the amount of effort a student will expend on a task!
Tutors can Motivate Students to Use Metacognitive Strategies!

*Strongly encourage them to:*

- Consider their goals
- Develop a plan! (e.g. schedule study appointments with themselves; make a study bet with friends; devise a new place to study)
- Commit to Three or More Intense Study Sessions per day (two during daylight hours)
- Believe in themselves!!!
Sharing Strategies that Have Worked for Others Can Be Very Motivational
Top 5 Reasons Folks Did Not Do Well on Test 1 in General Chemistry

1. Didn’t spend enough time on the material
2. Started the homework too late
3. Didn’t memorize the information I needed to memorize
4. Did not use the book
5. Assumed I understood information that I had read and re-read, but had not applied
Top 5 Reasons Folks Made an A on Test 1:

1. Did preview-review for every class
2. Did a little of the homework at a time
3. Used the book and did the suggested problems
4. Made flashcards of the information to be memorized
5. Practiced explaining the information to others
How Can Tutors Convert Students from Passive to Active Participants?

- Teach Students HOW to Learn
- Change Their Mindset!
- Motivate Them to Engage
Small Group Activity

- Describe three ways you can infuse learning strategies information into sessions with your students
- Describe three things you can do to increase student motivation
Useful Websites

• www.caps.unm.edu
• www.cas.lsu.edu
• www.howtostudy.org
• www.vark-learn.com
• www.drearlbloch.com
• Searches on www.google.com
Additional References


*Excellent student reference*
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• Colleagues in the International Learning Support Community
• The thousands of students who changed their attitudes and behaviors, and taught ME that students CAN learn how to learn!