

# Teaching Students to Be More Successful Learners and Thinkers

*A Workshop*

*By*

*Timothy L. Walter*

*Oakland Community College*



# Workshop Goals: Part I & II

- Defining what successful learners and thinkers do
- Teaching:
  - ▣ Focused reading, thinking, and learning
  - ▣ Focused note-taking
  - ▣ Focused test preparation
  - ▣ A strategy of critical thinking: TCDR
- Relating TCDR to the higher order thinking skills
- Applications of the learning and thinking strategies to your classroom setting

# Critical Thinking Definition

- KRITIKOS: The ability to discern or decide
- The cognitive processes of applying, analyzing, and evaluating information

These processes are manifested in verbal or written expression

# Questions We Will Answer in This Workshop

- What are students in the classroom and outside the classroom required to do to demonstrate they are successful learners and critical thinkers? Please have your college group develop a short list of suggestions.

# Typical Answers

- ❑ Students must ask and answer questions in class.
- ❑ Students must participate in class.
- ❑ Students must pay attention in class.
- ❑ Students must demonstrate they have done the assignments.
- ❑ Students must answer questions correctly on tests.
- ❑ Students must write papers that demonstrate they can answer important questions.

- 
- What are the barriers to successful learning and thinking faced by entering students? Please have your college group develop a short list of the barriers.

# Typical Answers

- Students have weak reading, writing, learning, time management, note-taking, test preparation, test-taking and critical thinking skills.
- Students have work schedules that compete with their education.
- Students' obligations to their families prevent them from studying and doing their work.
- Students aren't motivated to learn.
- Students come from backgrounds that don't support education.

# Exercise I

- What are the benefits of focused reading, thinking, and learning? Please read the **odd** questions that precede the following article on bees before you read the article. I will then give you five minutes to read the article.

1. Jake knew that the tree on the top of the knoll was a hollow tree because it
  - (1) had been deserted by the bees . . . . . ( )
  - (2) was an old tree . . . . . ( )
  - (3) didn't appear to be very strong . . . . . ( )
  - (4) contained a bee colony . . . . . ( )
2. If you cut from a tree the limb on which bees have swarmed and put it near a new hive, the bees will probably
  - (1) fly away . . . . . ( )
  - (2) go back to the old hive . . . . . ( )
  - (3) swarm to another branch of the tree . . . . . ( )
  - (4) go to the new hive . . . . . ( )
3. Jake decided to start a bee hive of his own because he wanted to
  - (1) follow grandfather's advice . . . . . ( )
  - (2) have honey for his hot cakes . . . . . ( )
  - (3) study the way bees live . . . . . ( )
  - (4) keep the bees from killing the old tree . . . . . ( )
4. When bees are swarming
  - (1) it is dangerous to get close to them . . . . . ( )
  - (2) it is safe to get close to them . . . . . ( )
  - (3) it is an indication that they are fighting . . . . . ( )
  - (4) they are producing wax . . . . . ( )
5. When an old queen moves to a new hive
  - (1) she will start a new colony for all of the bees from the old hive . . . . . ( )
  - (2) new queens will follow her . . . . . ( )
  - (3) she will destroy the old hive . . . . . ( )
  - (4) the bees that have been with her will probably follow her . . . . . ( )

# What happened to you as you read the article on bees?

- Did answers to the questions you had read bounce off the page?
- Did you skip information that answered questions that you knew you wouldn't be responsible to answer?
- Did you read looking for chunks of information/concepts that would answer questions?
- Did the questions you had read assist you focus or direct your reading?

# What are the critical reading strategies we are highlighting?

- In your college group, please list three or more reading strategies this exercise suggests would assist the students read more efficiently and effectively.

# Typical Answers

- When you read college related materials, read with a focus.
- Determine the critical questions you want to answer before you begin to read.
- When you know what you are looking for, you are more likely to find important answers to important questions.
- If you read without focus, you are likely to be bored, fall asleep, or not learn much from your reading.

# Exercise II: Read to Find the Main Point of the Article

## JUST THE FACTS, MA'AM

If you want to remember the main points in a textbook and connect them to one another, reading a summary seems to help more than reading the book itself.

Sixty-three students in the first of a series of studies had 20 minutes to read either a 8,000-word chapter from a basic linguistics text and a 1,000-word summary of a textbook chapter on African geography, or a summary of the linguistics chapter and the full text of a chapter about the geography. They then answered 16 true/false questions about each topic, half requiring them to recall a fact, the others requiring them to make a deduction from two or more facts. The students answered 16 more questions about each subject a week later.

On the average, the students did 20 percent better on the tests when they had read a summary than when they had read a full chapter. This was true immediately after reading and a week later, and on both kinds of questions.

But might not texts beat summaries in other situations? The researchers repeated the experiment with other groups of students, using "open-book" tests, substituting chapters from books on economics and Russian history, and underlining in the texts the main points in the summaries. Summary readers still scored higher.

Maybe, the researchers thought, texts give students background that helps them learn related information later on. To investigate that, the researchers split each chapter in half and then tested to find out whether students who had read the first part in summary form remembered the second part more accurately than students who had read the first part in text form. Regardless of whether the second half was summary or text, students who had read the summary of the first part remembered the second part better.

What of long-term recall? Six to twelve months after the initial tests, the researchers brought back as many of the students as they could and asked them a new set of true/false questions on the material they had studied. Among these 50 students, those who had read the summaries were still 2 percentage points more accurate than those who had read the texts.

The embellishments in the textbooks seem to have distracted the readers from the main points, the researchers say. They point out that their data do not show whether summaries would beat texts in advanced material, or in

# What Does This Research Suggest is Critical to Successful Reading?

- In your college group, please list two or more strategies this exercise suggests would assist the students read more efficiently and effectively.

# Typical Answers

---

- Pre-reading information is critical to developing a focus for your reading.
- Always try to read a summary first, then go ahead and read looking for answers to the questions raised in the summary.

# Exercise III

---

- How would you teach students to read and think about a chapter in a textbook?

# Problem:

- You have been given a \$5,000,000. stipend from NSF to research and develop a reading strategy for textbook chapters. The money has been given to you over a five year period. This strategy must dramatically impact the thinking and learning of American college students. The problem is that it has been 4 years, 11 months, and three weeks and you haven't gotten around to doing the work. Things got in the way.
- Given what we have talked about to this point, what does your college group think might be the critical strategy you would suggest to every American college student had you taken the time to do the research? Based upon what we have discussed to this point, please have your group list the key steps you would ask a student to follow in reading a textbook chapter.



- Pre-reading:

- Active Reading:

- Post-Reading:

## □ PRE-READING:

- Read all chapter headings, titles, captions, etc.
- Go to the back of the chapter and read summaries, questions, and critical thinking applications.
- In your notebook, answer the following two questions:
  - What is this chapter about?
  - What do I know about this subject?

## □ ACTIVE READING:

- For each bold heading in the chapter, turn the heading into a question. Use the text to answer your question.
- Consider using index cards or a separate page in your notebook to record vocabulary.

## □ POST-READING:

- Using just your question/answer notes, write a summary of the chapter.
- Create a list of discussion questions for class.
- Review your vocabulary cards and summaries frequently (especially before beginning a new reading section.)

# Exercise IV

---

- How would you apply what you have learned about focused reading, learning, and thinking to note-taking? Please have your college group take a few minutes to develop a list of suggestions based on what has been stated to date about reading strategies and developing questions and answers.

# Typical Answers

- Ask students to take careful notes about the main points of a lecture.
- Ask students to think of their notes as a series of answers to test questions.
- When taking notes from books and articles, ask students to focus on developing questions and answers.
- As soon as possible after class, ask students to develop several questions and answers from each set of notes that they believe may appear on their next test.
- Ask students to share their notes and questions and answers with fellow students to develop a sense of what other students believe has been said and will be on the test.


# Exercise V

---

- How would you apply these strategies to studying for an exam? Please have your college group take a few minutes to develop a list of suggestions based upon what has been said about reading and note-taking strategies.

# Typical answers

- Students should develop practice tests from their reading notes, course notes, study groups, and other sources of test questions.
- Students should participate in study groups in which they share potential questions and answers that may be on the test.
- Students should take practice tests under conditions similar to which they will be tested.
- Student should review study guides that are distributed by their instructors or professionally produced by publishing companies.

- 
- What is missing from the focused reading, note-taking, and test preparation activities that will enhance learning and thinking?
  - The answer to this question is critical thinking skills that will be the focus of the second part of the workshop.

# Workshop Goals: Part II

- To teach a strategy of critical thinking: TCDR
- TCDR is the basis upon which higher order thinking skills (i.e. applying, analyzing, and evaluating information) are based
- TCDR is a strategy that is the basis for critical thinking skills required for academic success

# Questions We Will Answer in this Workshop

---

- How did Walter, Knudsvig, and Smith study successful learners and critical thinkers to find the answer to the research question?

# Studying Successful Learners and Critical Thinkers

- In the early 1960's through the late 1980's we compared and contrasted several thousand of the most successful students with less successful students. We essentially compared and contrasted students receiving A's and B's with C level and struggling students. We assessed how they approached reading, learning, listening, note-taking, test preparation, test-taking, writing, and working in study groups.

# Questions We Will Answer in this Workshop:

- What do more successful learners and critical thinkers do as compared to less successful learners and critical thinkers? In your college groups please develop a short list of the critical skill differences we determined distinguished the more successful learners from the less successful learners.

# The Differences Between the Two Groups

- As better students read and listen to information, they ask better questions and develop better answers.
- Better students do this aloud, silently (cognitively) and in writing.
- Better students use a cognitive schema (mental strategy) to develop good questions and answers=The TCDR Strategy
- Better students use TCDR as they listen to, read, and process information. They restructure information into more meaningful constructs; questions and answers.

# What is the TCDR Strategy?

- The TCDR strategy of learning and critical thinking was developed by Walter, Knudsvig, and Smith
  - Topic
  - Class
  - Description
  - Relevance

# Examples of TCDR

## Reading a section of a textbook

- What is the topic? What is it about? (T)
- What overall class does the topic belong to? (C)
- What is the description of the topic? What does it look like? (D)
- What is the relevance of the topic? Why is it important? (R)

# Examples of TCDR

- Topic (T):

- ▣ Psychoanalysis

- Class (C):

- ▣ Method of Psychotherapy

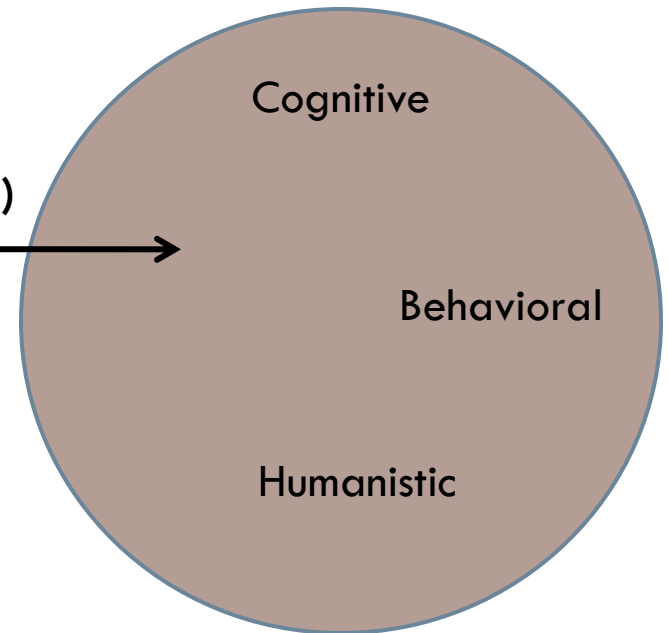
- Description (D):

- ▣ Free-association, etc.

- Relevance (R):

- ▣ Increase self-knowledge patient, etc

## Psychotherapies (C)



# Topic

**Assignment:** A sociology instructor gives the following question as a topic for a paper:

- What will be the importance of Barack Obama's 2008 election twenty years from now?

# Exercise 1

- In your college group, please use the TCDR strategy to answer the following questions.
- What is the Topic?
- Describe the overall Class to which the topic belongs?
- How would you describe Barrack Obama in respect to his characteristics, qualities, and agendas that will impact how people view his importance in 2028?
- Given these descriptors, which of the descriptors are most relevant to how the importance of his election will be viewed in 2028?

# Exercise 2

---

- How did your group use TCDR as you answered the question in a way that improved the answer you would have developed without using TCDR?
- What mistakes does the TCDR strategy prevent you from making as you develop the answer to your question?

# Class

Will determine the nature of

Description

Relevance

# Exercises 1 & 2

---

- If you hadn't used the TDCR Strategy, what would have been the differences in the answers you produced?

# Big Picture Question

---

- What are some of the higher level critical thinking skills you used as you developed answers to questions in the last two exercises?
- Please have your group list at least six higher order skills that are a by-product of TCDR.

# Typical answers

- Compare and contrast
- Interpret
- Analyze
- Synthesize
- Infer
- Refute
- See Fallacies and Eliminate
- Organize
- Reflect
- Question
- Deduce
- Dissect
- Evaluate
- Hypothesize
- Generalize
- Classify
- Define
- Judge
- See Relationships

# Recommended Sources

---

- **CRITICAL THINKING: BUILDING THE BASICS** (2003) by T. Walter, G. Knudsvig, and D.E.P. Smith, Wadsworth.

# Bloom's Taxonomy

- The next slide presents a condensed version of Bloom's Taxonomy. In your college group, review Bloom's Taxonomy and answer the question "Why would a student using the TCDR strategy be more likely to use some of the processes Bloom describes in his analysis of critical thinking strategies?"

# Bloom's Taxonomy - 21<sup>st</sup> Century

- Remembering Information – Recognizing/Recalling
- Understanding Information -  
Interpreting/Paraphrasing
- Applying Information – Using/Carrying out
- Analyzing Information – Comparing/Contrasting
- Evaluating Information – Judging/Assessing
- Creating and Generating New Information –  
Inventing/Developing

# Return to the Real World

- What strategies based on TCDR could you use in your own teaching to enhance your students' learning and critical thinking? In your college group, please develop a list of at least ten strategies you could use to enhance your students' learning and critical thinking based upon our workshop.

# Strategies to Enhance Students' Learning and Critical Thinking

- Clearly define your expectations of what students should learn at the beginning and throughout the semester.
- Demonstrate to students how they should read a chapter.
- Stress the importance of developing questions and answers from readings.
- When assigning a chapter, comment on the types of questions on which students should focus.
- Ask students to bring questions to class they have developed from readings and their notes.
- At the beginning of units, provide handouts focusing on the types of questions on which students should focus.
- Teach students how to develop questions and answers from their notes.

- Encourage students to develop questions and answers from their notes immediately following class.
- Teach students how to use TCDR to develop good questions and answers from their notes and readings. Show them what you believe distinguishes a good answer from an unacceptable answer.
- Encourage students to work in small groups to develop questions and answers from all sources.
- At the beginning of class, list a few questions on the board that will be the focus of your lecture or class discussion.
- During lectures, stop and pose questions to yourself and the class. Ask students what they believe may be the answer to the question.
- Teach students how to develop and take practice tests.
- Give students practice quizzes to work on outside of class.
- Assign study guides that focus on learning and thinking strategies for your course.
- During lectures, ask students questions and demonstrate that any reasonable answer is a good attempt
- Use bloom's Taxonomy to identify in your own test questions what you are really asking of students (i.e., Apply, Analyze, Evaluate, Etc.)