Learning Strategies in Advanced Educational Settings

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- In the upper right are buttons that control the presentation to your needs.
  - The buttons allow you to see all the slides and to jump directly to those that interest you.
  - My talk picks up on whatever slide you jump to.

About me
- Coordinator of Testing/Psychologist at The University of Akron CTCC
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Today’s talk
- Study skills, test taking, anxiety management skills
- I know these work
  - Because I have taught them to students over the last 28 years and have seen them succeed.
  - Many of the methods I used while going to college and graduate school.

Advanced Education Is a Step Up
- College and graduate education requires that you improve your study skills.
- Very different expectations about the responsibility for your learning.
  - You structure your learning
  - Your classmates are much better students
  - Work load much larger.
- There are other less obvious skills for you to learn that really help, such as politics.

Take care of yourself
- Get enough sleep
  - Attend class awake.
- Eat and exercise well.
- Attend to any problems that get in your way early
  - Anxious or discouraged?
  - Relationship problems?
  - Learning problems?
Develop A Support System

- For any course, finding a student who took it before is golden (M2, tutors)
- Talk to other students
  - Compare notes/share resources
  - Discuss what you think is going to be on the test
- Faculty (and assistants)
- Support services
  - Developmental Programs
  - Academic Advisors/PDAT helpers

Figure out what is important early

- Hard/easy course?
- Kinds of tests?
  - Essay tests require memorization of lists
- Where does test material come from?
- Professors office hours?
  - Where else can you get help?

Organize yourself

- Every professor owes you a syllabus
- Plan out your work so you are not overloaded
  - You may be taking three midterms in a week
  - Consistent effort superior to cramming
- Make sure you have time for school
  - Don’t schedule more than 70 hours per week or you will likely be overwhelmed.
  - Biggest difficulty is work

What to Do In Class

- Attend awake
- Form relationship with professor
  - Sit close to the professor
  - Familiar
  - Ask/answer questions
  - Up close narrows perceptual field so you will pay more attention
- If you can’t follow logic of professor get help

Note Taking 1 Memory Strategies

- Serial (requires most brain horsepower)
- Visual or pictures
- Mnemonic (HOMES, EGBDF)
- Conceptual framework
  - Requires you to think about the information
    • Heart questions (process)
    • Shopping list (grouped content)
  - Fits with Cornell note taking

Cornell Style Note

- 5 great lakes
- Huron
- Ontario
- Michigan
- Erie
- Superior
**Note Taking 2**

**Cornell Style Notes**
- Use your own words – this makes you think
- Go over your notes in 24 hours
  - 50% gone after 24 hours
  - Take notes on your notes
  - Adjust your note taking (usually means shorter)
  - Tend to pay attention more since you have to go over your notes tonight
  - If you don’t understand, get help elsewhere (professor, classmates)

**Adding Structure to Your Study**
- Structure vs. “feel like it approach”
- Make a schedule
  - Time, place, what material
- Study blocks
- Study at the same place (stimulus control)
- Study in a quiet environment

**Increasing Study Concentration**
- Only study in studious places
- Only study at your desk (no daydreaming)
  - Desk will make you want to study
- If you must take a break, get up from the desk
  - Designate a “break chair”
- Greatly improves concentration
- You will learn much faster

**Structure Enhances Motivation**
- Many people are waiting to be motivated
  - (“I wish I was more motivated”)
- Motivation fairy is a myth
- Motivation is self management
- Make a schedule and mark it when you keep to it
- Involve someone else in this process

**Structure Ensures That You Prepare Early**
- It takes 12 to 16 hours to integrate information into your thinking
- Cramming guarantees that you will do poorly
  - No chance to get help
  - Very poor efficiency
  - No chance to really understand the material

**Effective Reading**
- After you read over your notes
- Two styles of reading
  - More intense concept mapping
  - Less intense repeated reading
- Skim what you are about to read first
- Read with concept mapping
  - Underline, small notes in book, notes on paper
- Think about what you read – up to 50% of your time
- Read so you really understand the material
Repeated Reading and Color Coding
- Another reading style is multiple passes
- Read the material not getting bogged down
- Read again to more understand
- Works well with color coding
  - Use increasingly darker colors to highlight the key points
  - Make some key notes
- Visual sort of learning strategy

Group Study
- If you develop a study group you will have a tremendous advantages
- Four of you will always be able to prepare better than any one person in the group
- Even if you only meet two or three times this really helps

Pre-test Group Study
- Pick several students like you
- The week before a test agree to meet
- Each person bring 25-50 questions to the group
- Take turns answering each other’s questions
  - You present a question, the other students write down the answer on paper
  - Discuss the answer

How Pre-test Groups Help
- You will know the 25-50 questions you brought
- You will also learn the other student’s questions/answers
- Answering questions is extremely effective learning
- You will also be answering in the best possible way “What’s going to be on the test?”
- You can pool resources
- Persons who work alone will be competing with your group

Faculty Help
- Best to make an appointment or arrive during office hours
- Have questions already prepared
  - Not “what happened in class today”
- You can bring a friend and both ask questions – you will learn more
- Faculty will have a tendency to emphasize material on the test
- Remember politics count (sitting close, etc.)

Learning Science and Math
- Math is learning process that you apply in a novel situation
  - Anatomy vs. Physiology
  - Knowing about swimming vs. swimming
  - Knowing about flying vs. flying a plane
- You will see the exact problem for the first time on the math test
- Different from content learning
  - Content is the name of the material
  - Process requires knowing “how it works”
**How to Learn Math**

- Reading about a process skill doesn’t help
  - Learning to swim requires that you get in the water
  - Flying a plane requires you to get in the plane
- Learning math requires that you do more than observe
  - You have to train yourself so that you can do the problems without any help
  - Math tutor who does it for you in front of you is not helping
  - Example of learning to fly

**Several math homework strategies**

- Use your notes as a guide
- Start with the simpler problems
- Go back through the book and your notes for examples
- If you get help on your homework do extra problems to show that you actually know how to do the work.

**Do your math assignments actively**

- The whole point of doing your math homework is to learn the concepts involved
- It is critical that you keep testing yourself
- Do your homework by yourself
  - As much as possible you want to gain confidence in yourself
  - Only seek help when you are really stuck
  - You must be able to do your homework by yourself by test time to do well
  - Memorizing steps without understanding what you are doing doesn’t work – know concepts

**Before the math or science test**

- Do a sample of each kind of problem you may have
  - Understand concepts, not memorize steps
- Memorize any formulas
- See if there are any sample or old tests available

**Go to class to learn math skills**

- What is missed may be critical to a longer process – ladder rungs
- Be active in class and ask questions
- Take notes and go over them within 24 hours
- Make sure you know where to get extra help
  - Math lab or ask the professor

**Test Taking Strategies**

- Essay and short answer
- Multiple Choice
- Math and Science
**Preparation Essay Tests**
- Talk to other students and professor about kinds of questions
- Make one word lists of important facts
  - Mnemonics to help you remember
- Practice doing several essays (show to professor)
- Be sure you understand the question:
  - List
  - Compare and contrast

**Taking an Essay Test**
- Read the question carefully
  - Take note of “do three of the five questions”
  - Understand what the question is asking
- Make a brief outline first
  - You remember to address everything on the list
  - Logical answers better
  - Neat answers are better
- Always say something

**Multiple Choice Tests**
- This is a suggested method based on Kaplan’s strategies.
  - If something else works for you then do it
- Test Strategy
- Item Strategy

**Multiple Choice Test Strategy**
- Sequential Administration
  - Think of the test as a conveyer belt
    - Items move past you one at a time
    - You focus exclusively on this item
    - Once you have carefully answered the item, you move on
  - You don’t worry about past items because they are done.

**Multiple Choice Test Strategy**
- Your first hunch is usually your best
  - More intuitive
- If you do one item at a time you are less vulnerable to “magic thinking”
  - Responding to how the question looks rather than the content
  - “The last four have been B so this can’t be B.”

**Multiple Choice Test Strategy**
- Saving hard questions for later
  - The idea that you will know the answer later is a myth
  - Saving all the hard ones till last can make you nervous
  - If you are going to return to items you may keep thinking about them
  - Changing items typically damages your score - especially if anxious
  - Three possibilities (W-W, R-W, W-R)
**Multiple Choice Item Strategy**
- Read the question carefully
- Read question first, not answers
- Circle important words like “not”
- Can you answer the question in your head?
- Find the answer
- Rule out the other answers as wrong
- Gives equal time to the easy questions

**Avoid Guessing Strategies**
- Longer answers, middle of the road answers, C, more general answers, etc.
- Divert your attention from the item content to how the item looks.
  - 1, 10, 100, 1000, 10000 example
  - .01, .1, 1, 10, 100
- Professionally developed tests defend against guessing strategies
- National tests lay traps for you
  - 10 in a row example

**Don’t Know The Multiple Choice Test Answer?**
- Rule answers that seem wrong
- Guess rather quickly (less than ten seconds)
  - If you spend longer you are prone to answering based on a guessing strategy that doesn’t work
- Go on and don’t return

**Exceptions in Multiple Choice Tests**
- Computer tests that have items that involve simulations or videos take longer. Mark these and come back to them at the end
- If the item requires calculation and on your first pass you don't have a correct answer, mark the item and come back

**Taking Math Tests**
- Test strategy the opposite of multiple choice tests
  - If you can’t do an item, move on as others may be easier.
- Anxiety management is particularly important for math tests
  - Anxiety inhibits skill performance more than content performance

**During the test**
- Dump any formulas first thing so you remember them.
- Show your work clearly
- Show where the answer is on the page
- Run out of time on the harder items
- Check for careless errors
- After the test make sure you understand what you did wrong
Test Anxiety Management
- Bad experiences lead to
  - Conditioning
  - Development of “failure” language
- Places and symbols can become triggers for anxiety
  - Picking up your test
  - Others leaving, the clock, others discussing test before it begins, not knowing three in a row, etc.

Three Step Solution to Test Anxiety
- Train yourself to relax on command
- Develop a list of anxiety producing situations that you know are triggers for your feeling anxious during tests
- Practice pairing relaxation and reasonable thoughts with these events

Covert Training Works
- Waiting till test day is too late
  - “Remain calm in case of fire on the ship”
  - You have to train how to remain calm
- You can practice using your thoughts and this will be effective
  - Baby rabbit experiment

Training Yourself To Relax
- Obtain a relaxation CD
  - Overt voice, may have music
  - Subliminal messages don’t work
  - Listen several times until you know how to relax on command
- 15 minute relaxation script at: http://video.uakron.edu:82/counseling/Relax.mp3

Develop Positive Phrases
- Don’t know an item – “I don’t have to get them all to do well”
- “I can do it”
- “Relax and keep going”

Make a List of Anxiety Producing Test Situations
- Low anxiety
  - There will be a test next week
  - Waking up and realizing there will be a test
  - Going to the room
- Higher anxiety
  - Not knowing three or so in a row
  - Others leaving when you are half way done
  - Others talking before the test and you don’t know what they are talking about
  - Seeing you have five minutes left on the clock
Pair each item on your list with relaxation and reasonable phrases
- Start at the least anxiety producing situation
- Imagine yourself there
- Say “relax” and a reasonable phrase
- Let yourself relax (breath out)
- Do it again ten times
- Go down the list

Practice Makes Perfect
- Five days of going through your list will really help
- Like learning a dance step
- Practice makes the phrases available to you
- If you find you can’t get better, seek professional help

Instructions for Test Anxiety Management can be found at:
http://www.uakron.edu/counseling/docs/anxietyh.pdf

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  - http://www.neoucom.edu/audience/students/departmentContacts/Office ProfDev
- Individual appointments for development of learning skills