Developing Effective Study Skills:
Busting Myths and Sharing Best Practices

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ACES Student Success Workshop [09.14.2022]
Both knowing and doing must be in sync to be successful!

Stop and make a promise to yourself: “I will put into practice at least one of the study practices I learn about in this workshop!”

It might be painful at first, but it will pay off in the end. Remember: No pain, no gain!
4 Common Misconceptions that Undermine Learning

1. Learning is fast
Q. What does it take to really learn something?

Atkinson & Shiffrin Information Processing Model

**Get Information In**
- Environmental Stimuli
- Sensory Memory
- Unattended information is lost

**Keep Information In**
- Retention 15-30 seconds; Capacity is limited (7±2 novel units)
- Encoding, Storage
- Retrieval
- Unrehearsed information is lost

**Plug the Leaks!** Increasing attention and focus; eliminate distractions, increase engagement, make learning active, develop traits of importance to academic success

**Plug the Leaks!** Implementing effective evidenced based learning practices and develop traits of importance to academic success

**Traits of importance to academic success (Tough 2012):** grit, curiosity, character, conscientiousness, self control, resilience, perseverance, self-confidence, and optimism

Schmidt, 2019a,b; Schmidt, 2020

Noushad and Khurshid 2019
Deep, Durable Learning Takes **LOTS** of Time and is **Hard Work** – Hard Work that no one else can do, but **YOU**!

**YOUR CHOICE**
**Goal:** Put more time, effort, and intentionality into studying

**Good intentions**, but no specific plan of what needs to be done

**To Do List** is what needs to be done, but does not include when it will get done

**Implementation intention** is a plan made beforehand about **what** we are going to do, **when** we are going to do it, and **where** we are going to do it.

I should put more time and effort into studying for chemistry.

I put studying for my weekly chemistry quiz on my “To Do List.”

I will study for my weekly Friday chemistry quizzes on Mondays and Wednesdays from 3 to 5pm in the basement of the Illini Union.
Where are your study places?

5. Caffe Bene – Gregory & Nevada Street

Top 5 Places Around Campus

4. Huff Hall

3. Main Library
Where are your study places?

1. Illini Union

2. ACES Library
4 Common Misconceptions that Undermine Learning

1. Learning is fast
2. Knowledge is composed of isolated facts

Dr. Sam Chew’s How to Study video series at http://www.samford.edu/how-to-study/
Knowledge is Interconnected and Structured

Expert: C and D  Novice: A and B

Work on building rich, meaningful, connected, and flexible ways of knowledge organization

Start with Bloom’s Taxonomy: A Secret Decoding Device
Bloom’s Taxonomy

Cognitive Level

Remembering

Recognize and recall previously memorized information

Understanding

Use information to solve problems; transferring theoretical concepts to practical situations

Applying

Demonstrate a comprehension of the facts

Analyzing

Break objects or ideas into component parts, determining how parts relate to one another and to the overall structure

Evaluating

Combine information to produce a unique idea, solution, or product

Creating

Judge the validity of ideas or quality of work based on a set of criteria
Bloom’s Taxonomy Quiz

1. What is the definition of socialization? Remember (L)
2. Carry out an authentic research project. Create (H)
3. What will happen if the steps in the mixing process are changed? Analyze (M)
4. Calculate the number of calories in a taco. Apply (M)
5. Summarize the steps in the scientific method. Understand (L)
6. Is chicken from free range farming superior to the other farming techniques? Explain. Evaluate (H)
## Connecting Bloom’s Taxonomy to Learning Activities

<table>
<thead>
<tr>
<th>Level of Bloom’s Taxonomy</th>
<th>Explanation of Level</th>
<th>Example Verbs Used for Learning Objectives</th>
<th>Learning Activities (What students can do!)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remembering</td>
<td>Recognize and recall previously memorized information, such as facts, terminology, problem-solving strategies, rules</td>
<td>Arrange, define, identify, label, list, match, name, recall, recite</td>
<td>Quiz self on vocabulary words using flash cards</td>
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<td></td>
<td></td>
<td></td>
<td>Practice labeling a diagram or picture</td>
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<tr>
<td>Understanding</td>
<td>Demonstrate a comprehension of the facts, such as explaining a concept in your own words</td>
<td>Classify, compare, contrast, differentiate, discuss, distinguish, describe, explain, rewrite</td>
<td>Explain a concept in your own words</td>
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<td></td>
<td></td>
<td></td>
<td>Discuss course content with peers</td>
</tr>
<tr>
<td>Applying</td>
<td>Use information to solve problems; transferring theoretical concepts to practical situations</td>
<td>Apply, calculate, demonstrate, examine, illustrate, solve, use</td>
<td>As you review a process ask what would happen if you changed a step or level in the process</td>
</tr>
<tr>
<td>Analyzing</td>
<td>Break objects or ideas into component parts, determining how parts relate to one another and to the overall structure</td>
<td>Analyze, breakdown, deconstruct, examine, infer, model, question, select</td>
<td>Analyze and interpret data</td>
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<td></td>
<td></td>
<td></td>
<td>Compare and contrast two ideas or solutions</td>
</tr>
<tr>
<td>Evaluating</td>
<td>Judge the validity of ideas or quality of work based on a set of criteria</td>
<td>Appraise, argue, assess, critique, evaluate, grade, judge, recommend</td>
<td>Develop or use a rubric to provide a written peer assessment of strengths and weaknesses of another student’s work</td>
</tr>
<tr>
<td>Creating</td>
<td>Combine information to create a unique idea, solution, or product</td>
<td>Assemble, create, combine, compose, construct, hypothesize, reorganize, synthesize</td>
<td>Generate a hypothesis or design an experiment based on the topic area you are studying</td>
</tr>
</tbody>
</table>
4 Common Misconceptions that Undermine Learning

1. Learning is fast
2. Knowledge is composed of isolated facts
3. Being good at a subject is a matter of inborn talent rather than hard work

Dr. Sam Chew’s How to Study video series at http://www.samford.edu/how-to-study/
Growth vs. Fixed Mindset

**Growth Mindset:** Believing your talents can be developed through hard work, good strategies, and input from others.

**Fixed Mindset:** Believing your talents are innate, fixed gifts that cannot be developed.

Individuals with a growth mindset tend to achieve more than those with a more fixed mindset, partly because they worry less about looking smart and they put more energy into learning.
4 Common Misconceptions that Undermine Learning

1. Learning is fast
2. Knowledge is composed of isolated facts
3. Being good at a subject is a matter of inborn talent rather than hard work
4. I’m really good at multi-tasking, especially during class or when I am studying

Dr. Sam Chew’s How to Study video series at http://www.samford.edu/how-to-study/
The Bottomline: Evidence from psychology, cognitive science, and neuroscience suggests that when students multitask while doing schoolwork (Paul, 2013):

- Learning is far spottier and shallower than if the work had your full attention
- Remembering and understanding is substantially decreased
- Concentrating and applying your learning to new contexts is more difficult
- Studying is not only less effective, it is also less efficient

Replace Distracted Learning with The Study Cycle and Focused Study Sessions!
The Study Cycle

A comprehensive 5-step framework to help guide and develop your study practices

1. Get prepared
   - Before class, skim new material.
   - Note big ideas.
   - 5-15 minutes

2. Be present
   - Go to class!
   - Take notes.
   - Ask questions.

3. Attended
   - Read notes.
   - Fill in gaps.
   - Develop questions.
   - 10-15 minutes

4. Study
   - Schedule several focused study sessions per class each week.
   - 30-50 minutes

5. Review

From: LSU Student Success Center
Be Present. Maximize your learning **DURING** lecture. It’s **Prime Encoding** and **Note Making Time**!

Mind Full, or Mindful?
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   - Ask questions.

3. Post-Lecture Review
   - Read notes.
   - Fill in gaps.
   - Develop questions.
   - 10-15 minutes

4. Do Focused Study Sessions
   - Schedule several focused study sessions per class each week.
   - 30-50 minutes

Engage actively with the notes you took in class

From: LSU Student Success Center
Focused Study Sessions

Set your **GOALS** for the study session

Make studying **ACTIVE & at the REQUIRED LEVEL** of Bloom’s Taxonomy!

Spaced out study sessions that allow you to learn the material step-by-step over time, rather than all at once during cramming sessions right before the exam.

- **PLAN**
  - Decide what you will accomplish in your study session and get started.
  - (Suggested time: 1 - 2 minutes)

- **STUDY**
  - Interact with material: organize, concept map, summarize, process, read, work problems.
  - (Suggested time: 30 - 50 minutes)

- **BREAK**
  - Step away from material to clear your head.
  - (Suggested time: 5 - 10 minutes)

- **RECAP**
  - Go back over, summarize, wrap-up and check what you studied.
  - (Suggested time: 5 minutes)

**CHOOSE?**
- Should I continue studying?
- Should I take a break?
- Should I change tasks or subject?

From: LSU Center for Academic Success
Q. What are some of the most commonly used learning practices?

- Re-reading the material
- Underlining and highlighting
- Massed practice (i.e., cramming)
- Blocked practice (studying one topic at a time)
- Looking over problems that have already been worked out

However, they are the least productive!

These activities generate a feeling of familiarity, but familiarity ≠ mastery; students must be fully engaged in building course content in their OWN brain to achieve mastery!
Making Studying ACTIVE: Employing Evidence Based Learning Strategies

These learning strategies **work**, but they are a good deal of **work**. And, truthfully, that’s why they **work**!

1. Read the Text Book and Course Materials Actively

Preview + Generate Questions + Paraphrase + Annotate + Do Example Problems
Mental health effects of climate change

Attention has been drawn to the variety of health impacts of climate change. Global climate change is likely to be associated with spread of vector borne diseases, injuries and deaths due to extreme weather conditions such as floods, storms, and cyclones, thermal injury due to exposure to heat, risk of spread of water-borne infections due to floods and coastal water warming, and reduction in regional crop yields leading to malnutrition.[1,6,7,9,10] The impact of global climate change on health is likely to be substantial.[11] Mental health comprises an important component of health and is also likely to be affected by global climate change. The present narrative review discusses the mental health impact of global climate change from the point of view of a developing country.

HOW CAN THE CLIMATE CHANGE AFFECT MENTAL HEALTH?

Ambient temperature and effect on mental health

Increased exposure to heat is likely to become more common with the rise in the global temperature. It has been suggested that there is a relation between temperature rise and aggressive behavior.[10] Increase in rates of criminality and aggression have been observed during the hot summer months, suggesting a link between aggressive behaviors and temperature.[11,12] With global warming, it is possible that the rates of aggression may increase over time. Association has also been seen between the rates of suicides and the temperatures. It has been seen that suicides, especially violent ones are more common with the recent increase in temperatures.[13,14,15]

Heat waves are associated with mental and behavioral disorders. A study from Australia suggests that heat waves are associated with increased rates of admissions for mental disorders also, in conjunction with other disorders such as cardiovascular and renal illness.[16] Such heat waves have been associated with mood disorders, anxiety disorders, dementia and anxiety related disorders among others.[17] Extreme heat exposure can lead to physical as well as psychological exhaustion.[18] It suggests that occupational heat stress is associated with greater psychological distress among the workers.[19]

Similarly other studies have found an association between increased temperatures in the work place and greater psychological distress.[20]

Psychiatric consequence due to climate related disasters

Climate related disasters such as floods, hurricanes, and bush fires are often associated with stress-related psychiatric disorders. People who have been exposed to life threatening situations are at a considerable risk of developing post traumatic stress disorder (PTSD).[21,22] The symptoms of PTSD include flashbacks of the event, severe emotional and avoidance of cues to the memory of the event. In many cases, the symptoms of PTSD have a delayed onset, months to years after the experiencing of the event. Exposure to PTSD is associated with impairment in the quality of life and significant subjective distress.

Individuals who have been through frequent or repeated related natural disaster are not only at a higher risk of developing PTSD, but also reporting developing acute stress reaction and adjustment disorder.[23,24] These disorders are amenable to treatment with disorders which can subside over a period of time with rehabilitation and/or treatment. Other types of related disorders includes development of acute and transient psychosis and related psychoses.[25,26] Faced with the loss of home, environment, social structures and loved ones, an individual may experience bereavement (grief reaction) or depression. The depression is likely to be more pronounced in those living in small rural communities, than those living in big cities.[27] As the impact of climate change increases, over the same period, it is likely that a greater proportion of the population would be impacted by mental health consequences of climate related disasters.[28]

Drought and farmer suicide

Climate disaster at risk of:
- Psychosis
- Bipolar relapse
- Bereavement
- Depression

INTRODUCTION

Climate change refers to relatively stable changes in the meteorological parameters like precipitation and temperature over a period of time in a given region. Such a climate change has been described as a critical global challenge.[2] especially due to the fact that human activities have been contributory to changes in global climate. It has been observed that over decades the average global temperature has risen by 0.5°C due to anthropogenic emissions.[3] and projections for 2100 AD suggest that average global temperatures will rise by 2.4-5.8°C.[1] Such gradual increase in temperatures is likely to be associated with melting of ice caps, submergence of coastal areas, adverse precipitation events, and floods and droughts in different regions.[4] Such change in climate on a global scale is likely to affect the mankind in many different ways. The effect of global climate change is likely to be more severe in developing countries.[5]
These learning strategies work, but they are a good deal of work. And, truthfully, that’s why they work!

1. Read the Text Book and Course Materials Actively

Preview + Generate Questions + Paraphrase + Annotate + Do Example Problems

2. Get Questions Answered and Cleared Up Confusion

Seek Help!
Making Studying ACTIVE: Employing Evidence Based Learning Strategies

3. Do Homework Like an Exam

4. Teach the Material to a Real or Imaginary Audience

5. Reflect On Your Learning

Set your **GOALS** for the study session

Make studying **ACTIVE &** at the **REQUIRED LEVEL** of Bloom’s Taxonomy!

**REST** following learning is crucial for restoring energy & motivation and for allowing information to “sink in.”

**SUMMARIZE & CHECK** what you have learned

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**SPACED OUT STUDY SESSIONS** that allow you to learn the material step-by-step over time, rather than all at once during cramming sessions right before the exam.

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4. Do Focused Study Sessions
   - STUDY
     - Schedule several focused study sessions per class each week.
     - 30-50 minutes

5. Test yourself, before the test

From: LSU Student Success Center
Q1. Which step(s) of the Study Cycle is or would be most challenging for you to put into practice? Why?

Q2. What are ways you can motivate yourself to put the Study Cycle into practice?
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Q. Which of these misconceptions most undermines your learning?

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Q. What’s your One Thing?

1. Put in more **time**, **effort**, and **intentionality** into your studying.

2. Use **Bloom's Taxonomy** to choose appropriate learning activities and decode assignments and exam questions.

3. Develop a **Growth Mindset**.

4. **Stop** distracted learning and **Start** using The Study Cycle and make studying active.
Your participation and feedback are important!

1. Opportunity to participate in a research project about how to best help students learn with the Seibel Design Center – Dr. Saad Shehab

2. Use the QR Code below to take a short survey!
Resources

Illinois Student Learning Resources Website:
https://go.illinois.edu/CITL-StudentResources

Students have access to a free, electronic copy of this text from the University Library. Please note that you must be on-campus or using VPN in order to access this text.

Free, self-paced Learning How to Learn Coursera Course by Barbara Oakley
https://www.coursera.org/learn/learning-how-to-learn
References and Resources


References and Resources


LSU Study Cycle (n.d.). Center for Academic Success Retrieved at: https://www.lsu.edu/cas/earnbettergrades/tipsandtools/takecharge.php


