



Learning & Critical Thinking Skills

TMA Learning & Leadership Center

Outline

1. Learning

- What is Learning?
- Basic Principles of Learning
- Domains of Learning
- Learning Styles
- Tips!

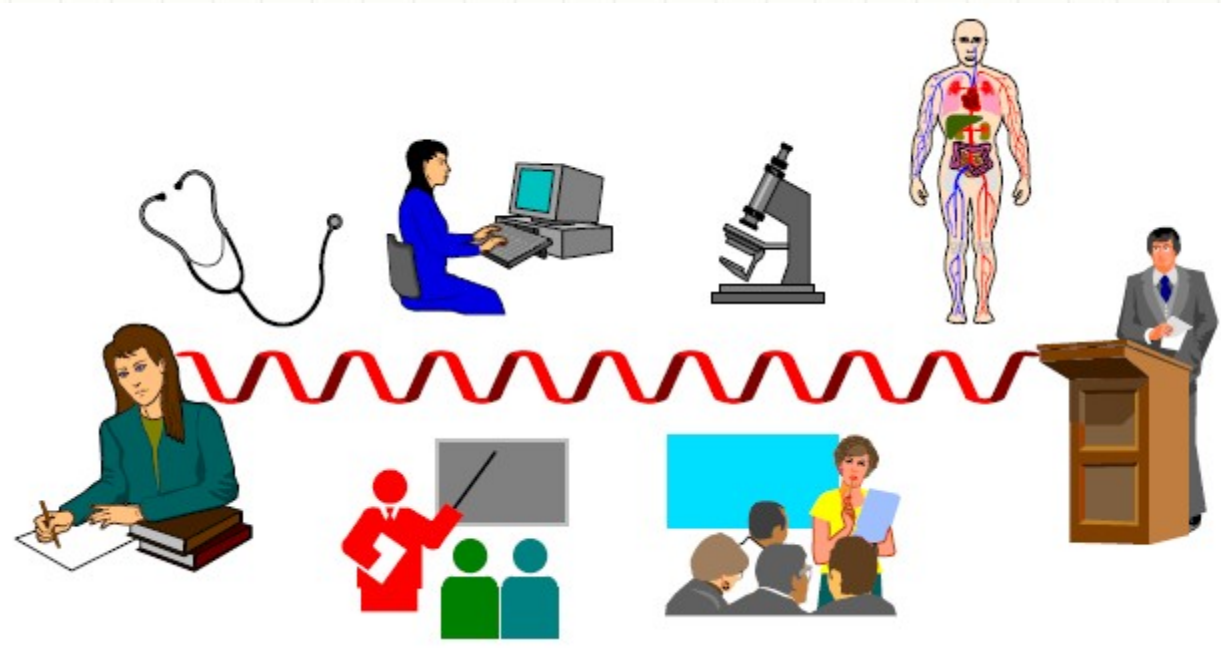
2. Critical thinking

- What's Critical Thinking?
- Recognizing a Problem
- Defining a Problem
- Focused Observation
- Brainstorming with Graphic
- Setting Goals

1. Learning

What is learning?

- Learning is the study of how information is sensed, stored, elaborated and retrieved.



Basic Principles of Learning

- Learning is continuous
- Learning is purposeful & must make sense to the learner
- Learning involves as many senses as possible
- Learning activities must be appropriate for the situation
- Learning must be stimulating
- Learning must result in the ability to perform
- Learning is affected by emotions

Domains of Learning

- The head – Cognitive

To recall, calculate, discuss, analyze, problem solve, etc.

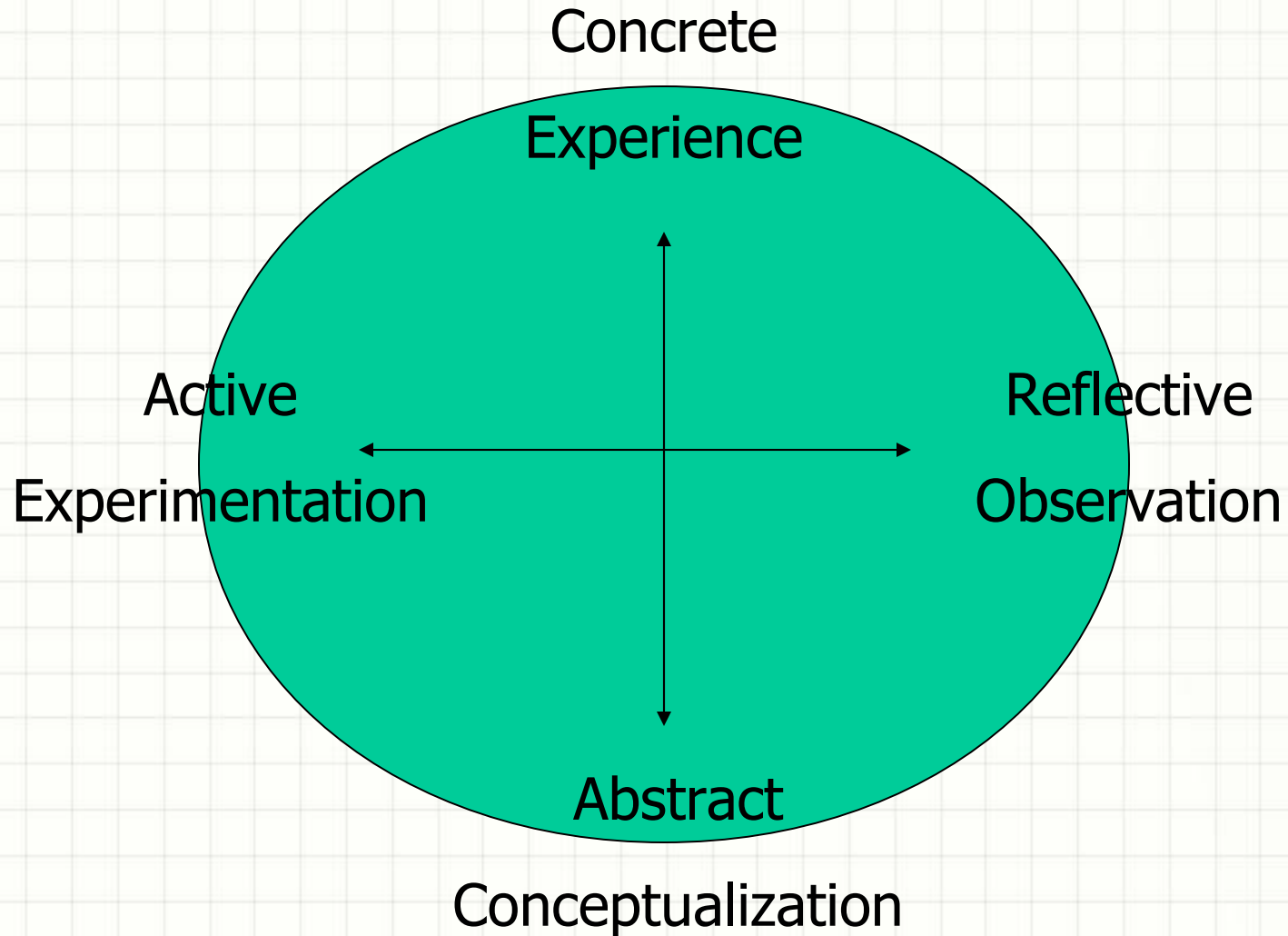
- The body – Psychomotor

To dance, swim, ski, dive, drive a car, ride a bike, etc.

- The heart – Affective

To like something or someone, love, appreciate, fear, hate, worship, etc.

Learning Styles



Tips - Doing Research

- **What is research?**
 - Help you understand and critically evaluate research findings that are presented to you.
- **How to do?**
 - Collect data
 - Analyze data
 - Build your own data

Tips - Group Working

- You might, for example work with other people on a joint presentation.
- This will require all members of the group to contribute to the planning, research, design and delivery of the presentation.

Tips - Keep learning & Practicing New Things

If you want the new information you just learned to stay put, keep practicing and rehearsing it

Tips - Learn in Multiple Ways

By learning in more than one way, you're further cementing the knowledge in your mind

Tips – Teach What You've Learned to Another Person

This process alone helps solidify new knowledge in your brain

Tips – Utilize Previous Learning to Promote New Learning

For example, if you are learning about *Romeo and Juliet*, you might associate what you learn about the play with prior knowledge you have about Shakespeare, the historical period in which the author lived and other relevant information.

Tips – Gain Practical Experience

While seeing information and then writing it down is important, actually putting new knowledge and skills into practice can be one of the best ways to improve learning

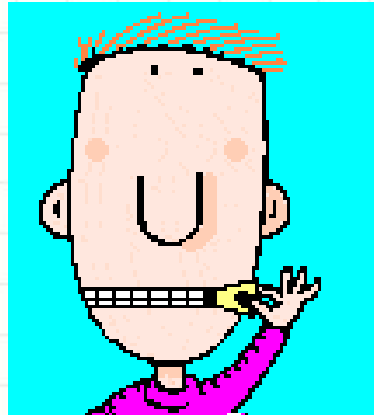
Tips - Learning to Listen!

- Good listening means you are paying attention.
- Try to hear what is said, not what you want to hear.
- What is the main point?
- What is the teacher going to say next?
- Listen for these essential phrases from the teacher:
“This is important...”



Tips - How to Listen Better!

- Form a good habit – good listening in class!
- Concentrate on what is going on in class – do not daydream!
- You can not listen well if you are talking!



Tips - Time Management

To ensure success in your learning you need to manage your time effectively !

Tips – Be Active !

- Find areas do not understand -> Ask expert, colleagues or find other supportive resources: internet, books, etc.
- Know where the best resources are for each subject
- Do all your homework and keep up to date with all assignments

Tips – At a Higher Cognitive Level

- Know how to develop self-motivation and persistence
- Understand how to develop resilience to overcome difficulties
- Know how to organize information to suit your known individual processing style
- Monitor the effectiveness of your own learning strategies and make changes where necessary
- Know how to handle pressure and stress

2. Critical Thinking

What's Critical Thinking

Critical thinking is the art of thinking about your thinking while you are thinking in order to make your thinking better: more clear, more accurate, or more defensible. (Paul in Craven & Hirnle (2000) p.139)

What is the difference between thinking & critical thinking?

- Critical thinking is controlled, purposeful & more likely to lead to obvious beneficial results
- Thinking is basically any mental activity; can be aimless & uncontrolled; it may serve a purpose, but we often aren't aware of its benefits; we might not even remember our thoughts at all

Recognizing a Problem

- **What Is a Problem?**

You are faced with a problem, you must take action or make decisions that will lead to resolution of that problem.

- **Road Block to Recognizing a Problem**

One of the most common reasons for not recognizing a problem is the desire to avoid taking action or responsibility

- **Types of Problems**

It relates to a timeframe and your personal priorities.

Recognizing a Problem - Practice

You are planning a family vacation to a resort 800 miles from your home. Here are some of the details you will need to take care of:

- Purchase plane tickets
- Research restaurants in the area around the resort
- Reserve accommodations
- Suspend delivery of mail and newspaper for duration of trip
- Hire a pet sitter for your cats

In what order should you complete these tasks?

Which is most important? Least important?

Recognizing a Problem - Practice

1. **Purchase plane tickets**—there is no vacation unless you can reach your destination
2. **Reserve accommodations**—many resorts are crowded and you run the risk of having no place to stay if you do not take care of this detail ahead of time
3. **Hire a pet sitter for your cats**—while this should not be a difficult detail to take care of, you can't go on vacation without securing care for your pets
4. **Suspend mail and newspaper delivery**— you could always call a neighbor from the resort to help you out if you realize you have forgotten to take care of this detail
5. **Research restaurants**— the advice you get when you are there could be superior to what you can find out from home

Defining a Problem

What Is the Actual Problem?

- **Get the information you need**, even if you have to ask for it.
- **Do not be tricked into solving offshoots**, or other consequences, of your problem instead of the problem itself.
- **Do not be overwhelmed** when you are faced with what looks like, or what you have been told is, a giant problem.

Defining a Problem - Practice

What is the real problem, and what are the offshoots of that problem?

- a. There is a leak in the roof.
- b. A heavy tree branch fell on the house during a storm.
- c. A large, dead oak tree is located next to the house.
- d. The bedroom floor has water damage.

Defining a Problem - Practice

The tree, c , is the real problem.

Focused observation

- Concentrate: You must pay undivided attention.
- Create a context: Look at the situation as a whole, instead of zeroing in on a small part.
- Be thorough: Your observations must be extensive and in-depth.

Focused observation – Practice

Rank the following situations (1–5) by how much concentration (awareness) they require. The number 5 requires the most concentration.

- shopping for groceries
- waiting for a doctor's appointment
- attending a meeting at work
- giving a speech
- walking around the block

Focused observation – Practice

3 shopping for groceries

1 waiting for a doctor's appointment

4 attending a meeting at work

5 giving a speech

2 walking around the block

Brainstorming with Graphic

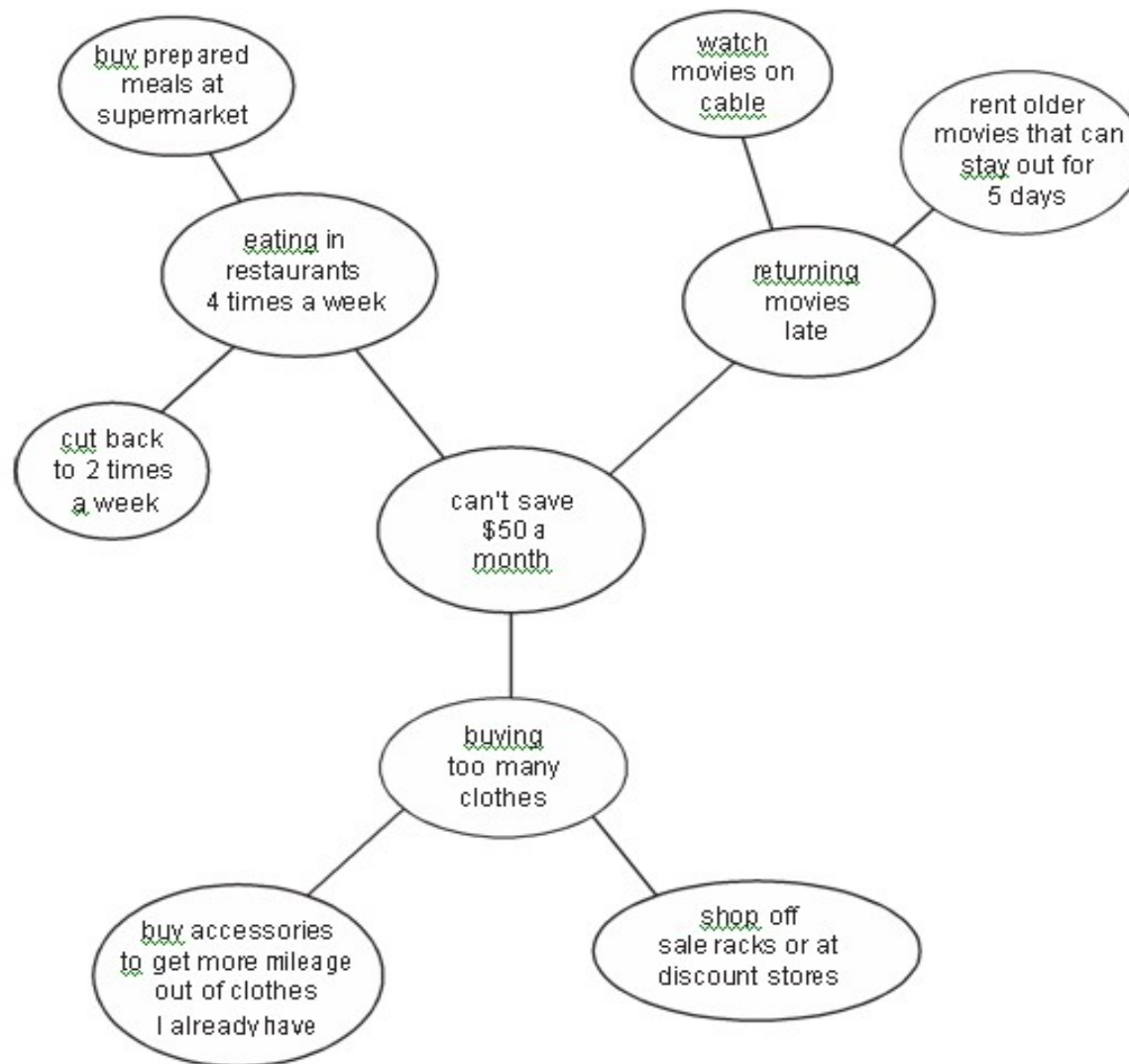
They help point the way toward effective decisions and solutions.

- They are a meaningful display of complex information.
- They help you to see patterns and organization in your thinking
- They help you gather and compress information.
- They keep you focused on your goal.
- They show what you know and what you still need to find out.
- They help you understand and interpret your thoughts and ideas

Brainstorming with Graphic - Practice

Create a web for the following problem: you want to deposit \$50 per month of disposable income in an investment account, but never seem to have the money. Causes of this problem are eating out at restaurants four times per week, not returning videos on time and paying late fees, and buying too many clothes. Brainstorm possible solutions using a web.

Brainstorming with Graphic - Practice



Setting Goals

Setting goals helps you make things happen. Goals give you a focus, and even a map, showing how to get from where you are to where you want to be

- In writing: Create a document of your goal
- Specific: Use as much detail as possible to explain what you want to accomplish
- Measurable: Describe your goal in terms that can be clearly evaluated
- Realistic: Don't set the goal too high or too low
- Deadline-oriented Determine a completion date; the achievement of your goal must happen in a reasonable time

Goal Setting Chart

Goal:

What is in my way:

How I will achieve my goal:

Step 1:

Step 2:

Step 3:

What I need to accomplish goal:

Timeline for accomplishing goal:

Daily:

Weekly:

When needed: Monthly

or long term: What I will get from goal:

Goal Setting Chart - Example

Goal Setting Chart

Goal: to get no grade below a B next marking period (which ends March 14)

What is in my way: too much socializing, poor study skills

How I will achieve my goal:

Step 1: cut back on socializing: do not sit with friends during class; no phone calls or computer until homework is done

Step 2: improve study skills; buy workbook on study skills and complete one practice exercise every day; keep notebooks organized by cleaning them out every day after school; make a file folder at home

for each class; do homework every day at desk; ask teacher(s) for help if I don't understand something

What I need to accomplish goal: study skills workbook, file folders

Timeline for accomplishing goal:

Daily: no socializing in class or after school until homework is done; study skills workbook, clean out notebooks; complete all homework assignments

Weekly: file assignments, tests, and quizzes

When needed: ask teacher for help; complete missing assignments

Long term: keep up plan for getting better grades

What I will get from goal: better education; feeling of accomplishment; name on honor roll; respect of parents and teachers

Goal Setting Chart - Practice

You were trying to save \$50 a month but had trouble limiting your spending of discretionary income. Using a web, you brainstormed possible solutions. Now, make the monthly investment a goal and use any or all of your possible solutions to complete the following goal chart.

Goal Setting Chart - Practice

Goal: to save \$50 a month

What is in my way: spending too much so I do not have the money to invest (habits I need to break)

How I will achieve my goal:

Step 1: limit restaurant meals to two times a week; buy takeout from supermarket other nights; buy

cookbook and pick out one recipe a week to try

Step 2: rent one movie a week, put in briefcase when done watching it so I will return it on way to work

Step 3: limit clothing purchases to \$100 a month; watch ads for sales and shop them

What I need to accomplish goal: willpower to change habits!

Timeline for accomplishing goal:

Daily: read newspaper for ads for clothing sales; shop for and/or eat dinner according to weekly plan

Weekly: rent one movie and return it the next day; make a plan for each night's dinner (restaurant, take out, cooking)

When needed: shop for clothes on sale

Monthly or long term: set up investment account, and have \$50 automatically withdrawn for bank

account each month

What I will get from goal: money to use for long-term goals and/or emergencies

Question 1

A couple has nine sons. Each son has a sister. How many children are there in the family?

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Hint: If everyone is here, each of you has 25 classmates.

Question 1

Answer: 10—it is the same sister for each of the nine sons.

If you said 18, don't feel bad—many people do.

Critical/Creative Thinking Skills:

Flexibility

Originality

Question 2

A basket containing 15 ears of corn is set by the woods. A raccoon carries away three ears a day. How many days will it take for the raccoon to empty the basket?

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A basket containing 15 ears of corn is set by the woods. A raccoon carries away three ears a day. How many days will it take for the raccoon to empty the basket?

Hint: The answer is not five.

Question 2

Answer: 15—did you forget that the raccoon has two ears?

Please don't hurt me!

Critical/Creative Thinking Skills:

Fluency

Flexibility

Originality

Question 3

A train one mile long traveling 60 miles per hour enters a tunnel one mile long. How long will it take the train to pass through the tunnel?

(This is strictly math, actually)

Question 3

A train one mile long traveling 60 miles per hour enters a tunnel one mile long. How long will it take the train to pass through the tunnel?

Hint: 60 miles per hour equals one mile per minute, but don't let this fool you.

Question 3

Answer: 2 minutes. The *entire* train has to pass through the tunnel, not just the front.

If you said one minute, at least you did the math right

Critical/Creative Thinking Skills:

Transfer

Elaboration

Flexibility

Question 4

A man has one brother and one sister. All three children have the same parents. The man says he is related to neither of the other two. What is he?

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A man has one brother and one sister. All three children have the same parents. The man says he is related to neither of the other two. What is he?

Hint: Adoptees are considered to have the same parents. Think *creatively*.

Question 4

Answer: A liar. I would also accept insane.

Critical/Creative Thinking Skills:

Flexibility

Originality

Fluency

Question 5

Which is correct?

Eight and seven **ARE** fourteen.

Eight and seven **IS** fourteen.

Question 5

Which is correct?

Eight and seven **ARE** fourteen.

Eight and seven **IS** fourteen.

Hint: Don't let yourself be distracted.

Question 5

Answer: Neither. $8 + 7 = \underline{15}$

Math is really at the root of everything.

Which is correct?

Eight and seven **ARE** fifteen.

Eight and seven **IS** fifteen.

Critical/Creative Thinking Skills:

Flexibility

Transfer



REFERENCE

- Critical Thinking Skills Success
Lauren Starkey.—1st ed.

REVISION HISTORY

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Jul 10, 2013	1.0	First version	Tuan Le