ALS1010 – Learning To Learn Better (AY 17/18 Semester 2)

1. Self-motivation

For motivation to start and be sustained:

1.1 Ability and Aptitude

1.1.1 Knowing the strength (to enhance) and weaknesses (to strengthen) of your abilities.

1.1.2 Without ability to perform well, motivation is tough to sustain.

1.1.3 Those who are confident in their ability to learn and are in a supportive environment learn even better and succeed even further.

1.2 Benefit

1.2.1 Identify what you get from learning.

1.2.2 Examples:

- Knowledge (something new)
- Skill
- Opportunities

1.2.3 How it makes you feel and the rewards possible from achieving success.

1.2.4 Before you start, you need to know the purpose and plan to do or learn.

1.2.5 The greater the benefit, the greater the motivation.

1.2.6 Persistence is the key to long-term success.

1.2.7 Success is a benefit as it boosts confidence which drives further success.

1.3 Confidence

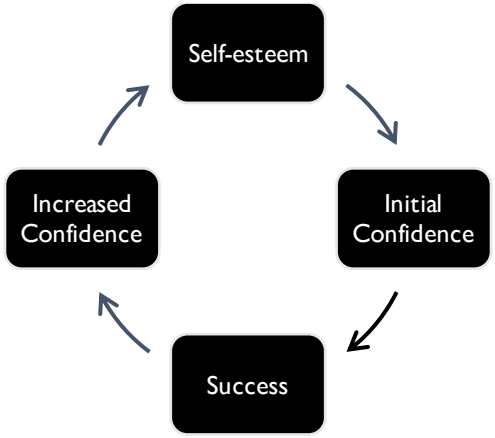
1.3.1 The greater the confidence, the greater the motivation will be.

1.3.2 Confidence in your ability and achieving what you desire.

1.3.3 The biggest obstacle in trying new ways to learn and do things is the lack of confidence.

1.3.4 Confidence is the key to developing and maintaining the desire and motivation to learn.

1.3.5 Confidence can fluctuate:



1.4 Desire

1.4.1 Desire and expectations drive motivation.

1.4.2 Without desire, there is no intrinsic (pull) and extrinsic (push) motivations.

1.4.3 Passion can be developed by:

- Becoming more familiar with it.
- Understanding how it relates to the real world.
- Exposing yourself to people who are experts in it.

1.4.4 To develop and sustain motivation, you need to understand *why* you want to do it.

1.4.5 Examples:

- Interest, self-satisfaction
- To please others, get their approval
- To avoid punishment, disapproval

1.4.6 Intrinsic motivations encourages learning more and doing something better.

1.4.7 Extrinsic motivations stem from expectations and peer pressure, resisting it develops independence.

1.5 *Summary*

1.5.1 Study something that really interests you (intrinsic motivation).

1.5.2 Set yourself more achievable goals and reward yourself when you reach each one (motivation to progress).

1.5.3 Give yourself credit for your achievements and don't blame yourself if you don't succeed at the first attempt.

1.5.4 Reflect, rewrite, understand and reconnect.

2. Goal setting

2.1 Goals give a greater sense of purpose, making you more willing to dedicate more time and effort to pursue your goal and more likely to persist in the face of any set-backs.

2.2 Set the right goals, not just any goals:

2.2.1 Achievable

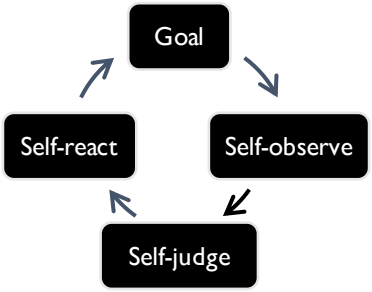
2.2.1.1 You can do it!

2.2.2 Believable

2.2.2.1 You can believe you can do it!

2.2.3 Clear and Concise

2.3



2.4 Steps towards setting an achievable goal:

2.4.1 Step 1 *(Framing the goal)*

2.4.1.1 Make the goal specific and concrete (clarify).

2.4.1.2 Questions to ask:

- *What is it* that I wish to do?
- *Why* do I want this goal?
- *What else* can make it help?

2.4.1.3 If a goal has many steps, the sub-tasks can be goals as well.

2.4.2 Step 2 *(Have a yardstick)*

2.4.2.1 Be clear as to how you will measure your progress.

2.4.2.2 Questions to ask:

- How would I know if I'm on track?
- Where can I improve?

2.4.2.3 Examples:

- Testing yourself/immediate feedback with the right answer.
- Recalling what you have learnt/how much is retained.
- Using tests as a guide.

2.4.3 Step 3 *(Timeframe)*

2.4.3.1 Set goals at *short* intervals.

2.4.3.2 If it is too long, break it into smaller time increments.

2.4.4 Step 4 *(Adjust your goals)*

2.4.4.1 Based on how you are progressing, adjust your goals. *(internal validation)*

2.4.4.2 Being fast: extend the goal and make things more difficult.

2.4.4.3 Being slow: scale back the goal and do something easier/more manageable (add sub-goals).

2.5 Don't waste tome creating goals that are too easy (short-cut) or too hard (wastes time).

2.6 Ask yourself what level of achievement will be acceptable to you (don't set unrealistic expectations).

2.7 Self-discipline and self-regulation

2.7.1 Necessary to meet goals and develop a sustainable learning cycle.

2.8 When facing a problem, have a plan

2.8.1 Identify your goal.

2.8.2 Devise a suitable plan for reaching it (step-by-step).

3. Self-organising/regulation

3.1 3 key processes:

3.1.1 *Self-observation*

3.1.1.1 Being aware of your own behaviour and actions.

3.1.1.2 Examples:

- How many hours are spent on studying?
- How often do you attend classes?
- How do you approach learning?

3.1.2 *Self-judgement*

3.1.2.1 Monitoring your own progress.

3.1.2.2 Assessing whether learning tasks are too easy/difficult.

3.1.3 *Self-reaction*

3.1.3.1 Adjusting your actions and behaviour based on self-judgement.

3.1.3.2 Examples:

- If falling short in studies, then try to increase effort/try new way of learning.

3.2 Self-control/Willpower

3.2.1 The ability to control all innate desires to reach goals.

3.2.2 Making a choice not to respond to immediate reward and delay gratification for a longer-termed benefit.

3.2.3 Making choices based on a regular basis, slowing things down and analysing them.

3.2.4 Removing emotion and going to a more deliberate practiced way of thinking.

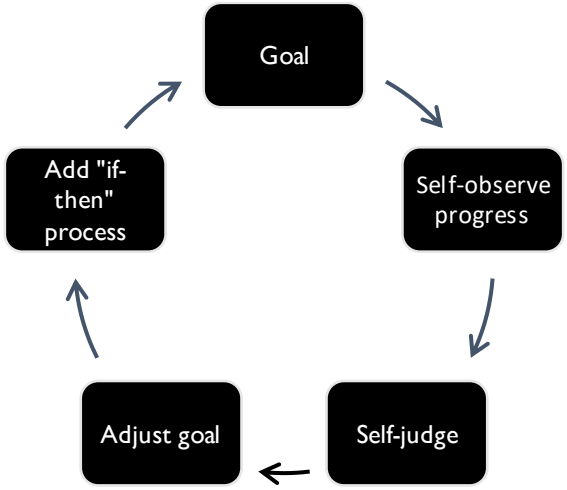
3.3 *"If-then" method*

3.3.1 "If A happens, then do B."

3.3.2 Outcome-oriented thinking.

3.3.3 Identify the particular situation that leads to the problem with the "if-then" scenario to reduce the problem.

3.3.4



3.3.5 Examples:

- "If I see a chocolate cake, then I will only eat one slice."
- "If I finish my work, then …"

3.4 Other tips:

- Procrastination can become the enemy.
- No excuses, no delays – be honest with yourself.
- Face the problem, have a plan – small step can be a giant step forward.
- Find *support* (a coach, a friend to encourage you).
- Maintain *focus*, avoid distractions.
- Make a self-conscious effort and don't slip back into bad habits.

4. Practice

4.1 Deliberate practice.

4.2 Training ourselves through meaningful and effective practice.

4.3 Primary learning principle

4.3.1 Simple repetition of the same action/material makes us remember an action better with less time and effort to expend in the process.

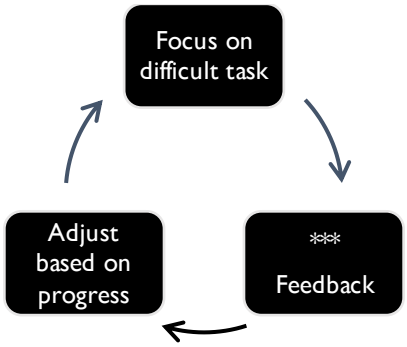
4.3.2 The action becomes more automatic and less conscious.

4.4 Not just simple repetition but *planned, thoughtful and deliberate* practice.

4.5 Tips:

- Do more of what gives you the trouble.
- Get immediate feedback on how well you are performing and use it to improve.
- Practice what you don't know, not what you already know.

4.6



4.7 Practice makes us ready for the unexpected which will require us to use what we have learnt even when we encounter an issue for the first time.

4.8 Examples:

- List down weaker subjects/less confident topics and allocate more time.

5. Repetition

5.1 Testing yourself and recall.

5.2 Process of generating answers to your own questions is a more powerful technique of learning than just re-reading the material.

5.3 Practice retrieving information after study is more effective than reading once/twice/multiple times.

5.4 Examples:

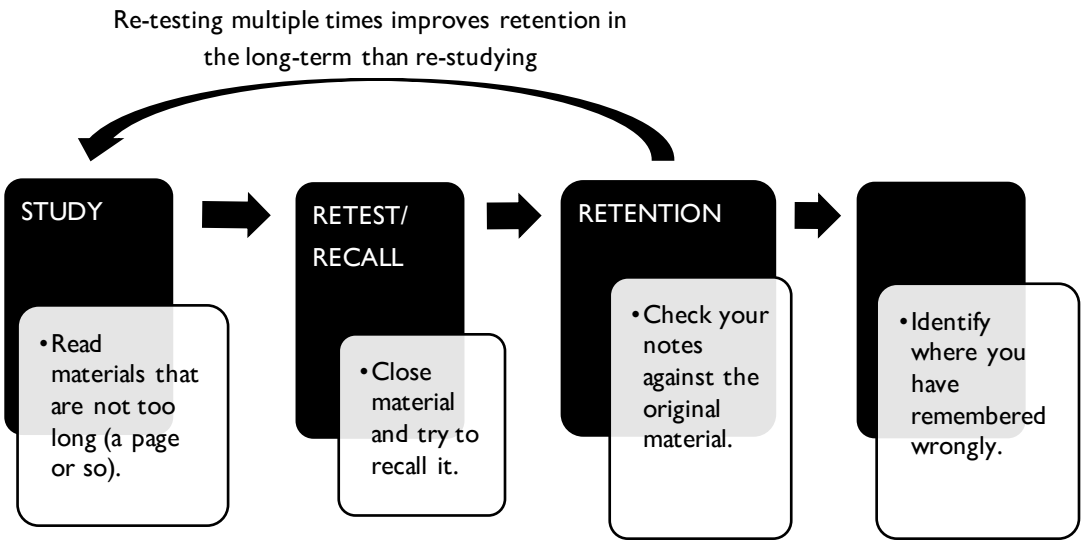
- Flashcards (active recall, generating answers instead of having MCQs).

5.5 *Testing/Recall/Generation Effect*

5.5.1 Effective learning through words, pictures, symbols etc.

5.5.2 Improves long-term retention of information.

5.5.3



5.6 Specific suggestions:

- 5.6.1 Read and re-read often.
  - 5.6.1.1 Take breaks between your reading times.
- 5.6.2 Repeat exactly.
  - 5.6.2.1 Repeat and recall the *same* thing repeatedly.
- 5.6.3 Repeat and rephrase.
  - 5.6.3.1 Recall information in different ways.
  - 5.6.3.2 Examples: own images, phrases
- 5.6.4 Repeat with example.
  - 5.6.4.1 Demonstrations.
- 5.6.5 Repeat with different media.
  - 5.6.5.1 Go online.
- 5.6.6 Recall with different media.
  - 5.6.6.1 In different ways: make notes, draw pictures/symbols, audio/video recordings of learnings.
- 5.6.7 Test and re-test.
- 5.6.8 Learn with others.

5.7 Different types of repetition are better than the same type.

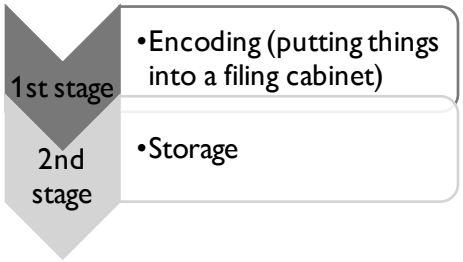
5.8 Variety will keep your brain *engaged* and *focused*.

5.9

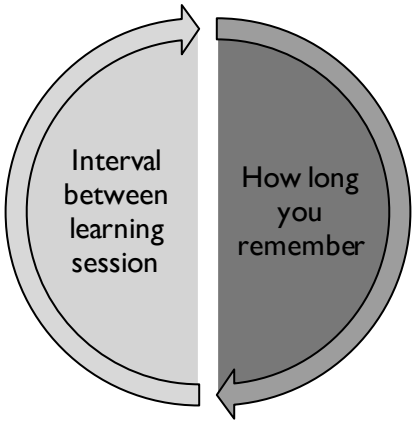
Select
Prepare
Practice
Measure
Adapt
Reflect

6. Spacing

6.1 In memory:



6.2 Learning or programming the brain is more effective the greater the interval between study sessions.



6.3 If you learn with small gaps between study sessions, you'll forget more quickly since time is needed for consolidation.

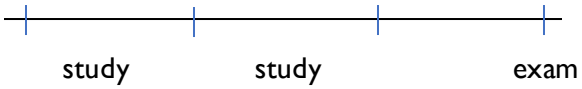
6.4 Spacing effect

6.4.1 Pieces of information **spread** over a longer time.

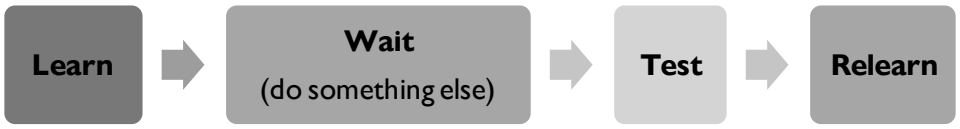
6.4.2 **Spacing shapes how long we remember.**

6.4.3 Simple: fewer repetitions
Complex (lengthy, technical materials): more repetitions

6.4.4 What's a right/best spacing interval?
10% - 30% of the time before a test.



6.4.5



6.4.6 Plan gaps between learning, the wider the gaps the more effective.

6.4.7 Spacing helps retention.

7. Interleaving

7.1 Learning by interleaving different tasks helps with *long term retention*.

7.2 Sequential vs interleaved practice

7.2.1 Interleaved practice may take a longer time to learn but retention is longer.

7.2.2 This is due to more parts of the brain being engaged during the learning process.

7.3 Practicing a **mixed set** of skills works better!

7.4 Interleave your skills with other *similar* types of *skills*.

7.5 It is normal for sustained learning to be slow and uncomfortable.

8. Making connections

8.1 Trying to remember facts, learning with understanding.

8.2 Levels of learning:

Remember
Understand
Analyse
Organise
Evaluate
Apply
Synthesise

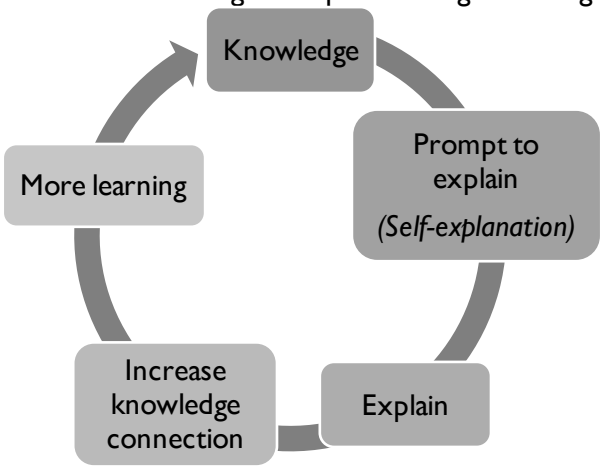
8.3 Elaboration: Asking Questions

- 8.3.1 *Why? Why not?*
- 8.3.2 *What if? What-if-not?*
- 8.3.3 *What's the importance of X?*

8.4 **Asking Questions the Right Way**

- 8.4.1 Effective questions help to *clarify*.
  - 8.4.1.1 How does this work? What is the basis for this? Other examples?
- 8.4.2 *Synthesise*.
  - 8.4.2.1 How does it fit into what I've learnt previously?
- 8.4.3 Use questions that *evaluate*.
  - 8.4.3.1 Does this information change what I'm planning in my hypothesis? Does it affect other factors?
- 8.4.4 Use questions to stimulate *creativity*.
  - 8.4.4.1 Can this be applied elsewhere? Can it be combined with something else? Translate into higher order learning skill.

8.5 The larger and deeper the elaboration, the greater the learning.
(along with self-creation and greater pre-existing knowledge)



8.6 *Self-explanation*

- 8.6.1 Explaining what you are doing.
- 8.6.2 Great summaries have relevant content and focus on the main point with clarity,
- 8.6.3 Summarising tips:
  - 8.6.3.1 Find the main idea.
  - 8.6.3.2 Find ideas (that support the main idea).

8.7 *Concept Mapping*

- 8.7.1 Drawing a map or a diagram.
- 8.7.2 Connecting ideas to show relationships between what you know about the subject on a single map.

8.8 *Highlighting* ***selectively***

8.8.1 Focus and understanding (main idea and what to focus on).

8.8.2 Rule: No more than 1 line per paragraph.

8.8.3

Read to understand
Be selective
Highlight sparingly

8.9 Encoding specificity: Studying ina similar environment

9. Collaboration

9.1 Talking with friends will identify misconceptions.

9.2 Teaching is to learn twice.

9.3 Commit a small part of your time in a study group.

9.4 Share, compare and learn.

9.5 Effective peer learning:

Clarification
Elaboration
Reconceptualisation (of material through interaction)

9.6

Organise	Tap into each other's strengths
Explain	What you have learnt to your friends
Ask	Qs
Search Share	Resources
Meet	Face-to-face if possible

9.7 Important to find the right peers.

9.8 Develop a common understanding and setting up of ground rules (level of pre-preparation).

9.9 While studying alone can be effective, learning with others can be even more effective and a beneficial way to learn better!

10. Managing sleep

10.1 *Sleep functions*

- Restore (conserve energy)
- Energise
- Remember (memory consolidation)
- Grow (brain development and growth)
- Clean (removal of metabolic debris)

10.2 How much sleep should I get each night? 7 – 9 hours of sleep.

10.3 Sleeping less than the amount required (insufficient sleep) to feel/perform at your best has negative consequences on:

- Attention
- Working memory
- Cognitive processing and speed
- Mood

and impairment of vigilance and reaction.

10.4 Importance of sleep:
Declarative memory (ability to recall, facts or events)

10.5 Deep sleep:
Consolidation of newly formed memories

10.6 Long term memory is better when (learn → sleep → remember) since sleep is no long passive, the brain is actively processing/redistributing memories for long term storage.

10.7 There are "neuronal replays" of events during sleep.

10.8 It is more likely to discover hidden solutions to problems if you sleep following study.

10.9 Should you take a nap during the day?
A short nap of 20-30 minutes can aid learning (improving mood/alertness) but a long nap/nap taken too late in the day might affect the quality of night-time sleep.

10.10 Factors determining sleep-wake timing:

- *Homeostatic* sleep drive builds up with time spent awake.
- *Circadian* sleep drive increases during night-time hours.

10.11 Modifiable habits:

- Caffeine: stimulant (half-life of ~5 hours).
- Avoid having caffeinated drinks after 3pm.
- Inefficient and ineffective to burn midnight oil.

10.12 Suggestions to sleep better:

- Maintain a regular sleep/wake time schedule.
- Establish a regular relaxing bed-time routine.
- Get comfortable (sleep-inducing environment – dark, quiet, comfortable).
- Don't use e-devices.
- Don't drink alcohol and caffeine too late.

10.13 Getting enough sleep is essential to the learning process.