- Lecture 4: Effective reading

當前教育之對治方案: A.I.M.

- 態度(Attitude)：如何改變自己態度而願意學嗎？
- 興趣(Interests)：如何讓自己感到有趣而願意學嗎？
- 動機(Motivation)：如何加強自己動機而願意學嗎？
- 建設自己的『Can Do』心態，告訴自己「I can do it！」
- Impossible 賺化成 I'm piossible
- Learning is probably like sports or hobby. The more you do it, the more you like it.

利用大學四年學好外語

English like sport needs work-out.

- 把握學習外文的所有機會。
- 將外語學習融入自己的生活，透過使用語言來學習。
- 好好讀完一本原文書，能熟悉你專業英文用詞遣字與表達方式。
- 每天至少接觸外語一小時。不斷地自我練習。
- 設定學習外語的目標: 聽說寫讀的表達能力
- 參與外語的檢定考試，督促自己。

逢甲大學駱榮富教授-如何閱讀原文書

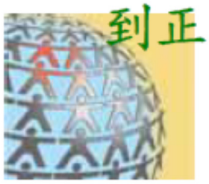
讀原文書時，最常碰到的難題

- 讀不懂的生字太多。
- 感覺片斷資訊，看不出重點。
- 讀了很多遍、查了所有單字，還是讀不懂。
- 有言語隔閡、根本不想看、沒有動力。
- 連習題看懂都有困難，更何況是整個章節。
- 中譯本跟原文書有所差距、無法對照。
- 專業術語之解釋。(同一單字意思頗多，南轅北轍，不會選出正確之解。)

逢甲大學駱榮富教授-如何閱讀原文書

讀原文書的迷思

- 英文閱讀需要透過翻譯成對應的中文
- 以為每個生字都要查字典
- 以為看懂每個單字才看得懂文章
- 文法底子不好，英文閱讀能力就沒救
- 英文閱讀能力沒有捷徑，也沒有方法 (事實上，靠勤勞&方法方能成功)
- 任何單字都可以在隨身攜帶的電子辭典中查到正確的意思!



Re-Invent the Wheel!

逢甲大學駱榮富教授-如何閱讀原文書

迷思

閱讀原文書常有幾個迷思:

- 一、依照中學學習短文的方式，以為每個生字都要查字典；
- 二、以為看懂每個單字才看得懂文章，或看得懂文章的人一定認得每個單字； 其實並不必然。
- 一篇文章中有關鍵的重要字，也有不重要的字，如果每個單字都查反而會打亂閱讀的思緒。應該是遇到常出現、會影響文意的理解和讓你想瞭解的需 求增加時的字，才需要查英英字典，這樣的單字查過之後也比較不容易忘記。另外，一個單字常有很多意思，須視文本內容來決定正確的意思。

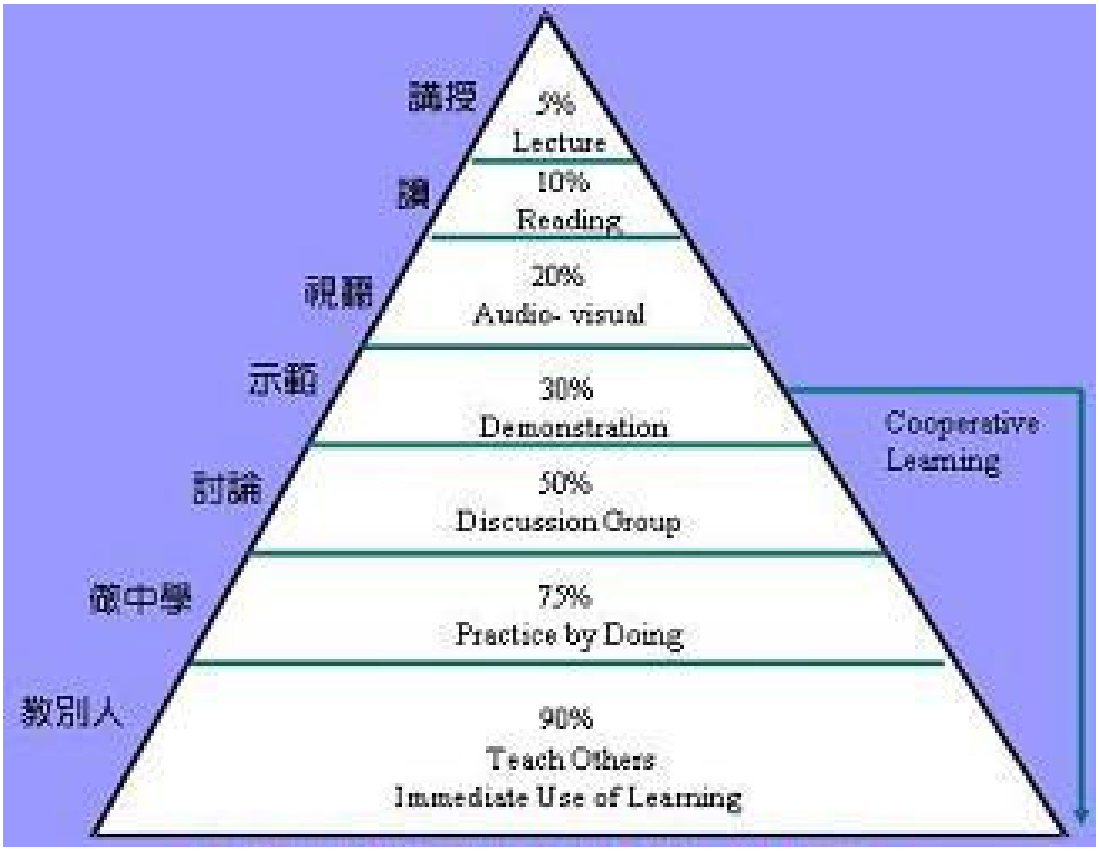
So, how to correctly learn English?

主動回憶學習法再度獲得美國
教育心理學家重視
http://eduexpress.blogspot.com/2009/06/blog-post_30.html

How to read English textbook?
如何閱讀原文書

- Tell me, I forget.
- Show me, I remember.
- Involve me, I understand

學習金字塔



SQ3R

- 不管是讀原文書還是中文書，都可以使用 SQ3R 的讀書方法。所謂 SQ3R 就是：Survey， Question，Read，Recite，Review。
- Survey 是先閱讀 title、introduction/summary、粗體字或圖表來抓文章的結構，思考它安排的邏輯；
- Question 是將標題改寫成問句，猜想這些段落要討論哪些問題；
- Read，指的是先將全文略讀一次，不要被不瞭解的細節阻礙，接著再看內容是否解答了先前提出的問題；
- Recite，是將每一段的重點銘記在心；
- Review，讀完之後將書本闔上，回想文章的架構、討論的問題和回應。

英文閱讀方法
SQ3R (Survey, Question, Read, Recite/Recall, Review)

- 閱讀前: 預測作者、瀏覽目錄。(產生全文概念/主旨)。將標題改成問句。
- 閱讀中:全文閱讀,回想重點。找出問題的答案，並以圖表方式如concept maps, flow chart, table, vertical tree diagram等整理內容。
- 閱讀後:複習整理文章架構和重點。建立心智概念圖 (Mind Map)
- 英文是第二語言，但需要自己的母語作為依歸，先確定自己真正的熟悉懂中文。
- 將學習心態由少量精讀 (learning to read)轉為廣泛閱讀 (reading to learn)

逢甲大學駱榮富教授-如何閱讀原文書

SQ3R-W

Thinking, Reading, & Writing Strategies for Textbook Chapters

Strategy	WHAT to do.....	How does this strategy help your thinking?
Survey 	• **Survey** the chapter features. ○ Purpose of chapter ○ Vocabulary lists ○ Main Ideas ○ Titles ○ Bold words ○ Charts ○ Maps ○ Pictures ○ Diagrams ○ Time Lines ○ Summaries ○ End of chapter questions	Surveying the chapter helps your **mind think and link** what you **know** already about the topic and helps you make **new discoveries**.
Question 	• **Change every title into a question.**	Creating questions helps your **mind** read for a purpose.
Read 	• **Read each section** to answer your questions. • Stop! Ask - What do I need to KNOW....? • **Locate and Underline** ▪ important ideas ▪ supporting details	Reading carefully, helps your **mind** discover new information.
Recite 	• Without looking at the book, **say or write** the important ideas in the paragraph section. • Look back --- Did you include all of the information? • If not, **reread** and **recite** the information **again.**	Reciting means saying or writing the information. This helps your **mind** focus on the important ideas.
Review & Write 	**Write notes for the important information.** • **Write 2 column notes**. • **Sketch Picture Note Summaries** Draw pictures or diagrams to summarize the information. • **Create Graphic Organizers** for your notes.	Review then write or sketch ideas to help your **mind:** ○ **remember** the important information.  Jane Haugh 2004

https://www.youtube.com/watch?v=0dhcSP_Myjg

how to take SQ3R notes ?

SQ3R

What Is SQ3R?

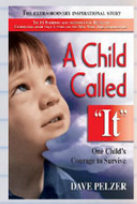
Survey- Skim

Question - Write down any questions you may have.

Read - Start reading.

Recite Repeat what you read on your mind.

Review Review what you have read.



Using SQ3R on A Child Called "It"

Survey - I skimmed Chapter 1 and found out that a Chil is being abused by his mother.

Questions - While skimming, some questions came up like, why do she abuse him? Did he do something that made her like that? Was she always like this?

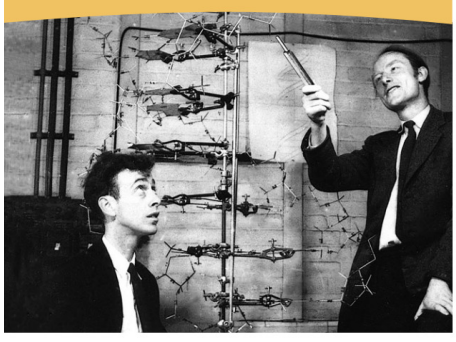
Read - When I stared reading, I used my highlighter to highlight anything that I thought would be important, or words i didnt know.

Recite - After I read Chapter 1, I went back to my notes and questions I had written down, and began to repeat them

Review - During this step, I reviewed my notes and question to figure out if i got my answers answred.

SQ3R biology template

The Molecular Basis of Inheritance



▲ Figure 16.1 How was the structure of DNA determined?

KEY CONCEPTS

16.1 DNA is the genetic material
16.2 Many proteins work together in DNA replication and repair
16.3 A chromosome consists of a DNA molecule packed together with proteins

OVERVIEW

Life's Operating Instructions

In April 1953, James Watson and Francis Crick shook the scientific world with an elegant double-helical model for the structure of deoxyribonucleic acid, or DNA. **Figure 16.1** shows Watson (left) and Crick admiring their DNA model, which they built from tin and wire. Over the past 60 years or so, their model has evolved from a novel proposition to an icon of modern biology. Mendel's heritable factors and Morgan's genes on chromosomes are, in fact, composed of DNA. Chemically speaking, your genetic endowment is the DNA

you inherited from your parents. DNA, the substance of inheritance, is the most celebrated molecule of our time.

Of all nature's molecules, nucleic acids are unique in their ability to direct their own replication from monomers. Indeed, the resemblance of offspring to their parents has its basis in the precise replication of DNA and its transmission from one generation to the next. Hereditary information is encoded in the chemical language of DNA and reproduced in all the cells of your body. It is this DNA program that directs the development of your biochemical, anatomical, physiological, and, to some extent, behavioral traits. In this chapter, you will discover how biologists deduced that DNA is the genetic material and how Watson and Crick worked out its structure. You will also learn about **DNA replication**, the process by which a DNA molecule is copied, and how cells repair their DNA. Finally, you will explore how a molecule of DNA is packaged together with proteins in a chromosome.

Sample reading materials

The Search for the Genetic Material: *Scientific Inquiry*

Once T. H. Morgan's group showed that genes exist as parts of chromosomes (described in Chapter 15), the two chemical components of chromosomes—DNA and protein—became the candidates for the genetic material. Until the 1940s, the case for proteins seemed stronger, especially since biochemists had identified them as a class of macromolecules with great heterogeneity and specificity of function, essential requirements for the hereditary material. Moreover, little was known about nucleic acids, whose physical and chemical properties seemed far too uniform to account for the multitude of specific inherited traits exhibited by every organism. This view gradually changed as experiments with microorganisms yielded unexpected results. As with the work of Mendel and Morgan, a key factor in determining the identity of the genetic material was the choice of appropriate experimental organisms. The role of DNA in heredity was first worked out while studying bacteria and the viruses that infect them, which are far simpler than pea plants, fruit flies, or humans. In this section, we will trace the search for the genetic material in some detail as a case study in scientific inquiry.

Q, questions

- Where are gene located?

➢Genes exist as parts of chromosomes (Morgan)

- Whether DNA or Protein is the candidate for the genetic material

>The case for protein seems stronger, since protein has great diversity of function essential for heredity

homework

Read:【TED-Ed】蟲蟲危機從何而來？ (Why are there so many insects?)
https://tw.voicetube.com/videos/35769?ref=teded

Transform 3-5 key concepts/key words you found in the film into questions and answers

Why gradually scientists change their view that inherited materials are DNA?

The experiments with microorganisms yield unexpected results.

What model organism was used to prove DNA in heredity?

Study bacteria and the virus that affects them are far more simpler than pea plants or humans.

- Reading and Learning The SQ3R Method of Textbook Study
- https://www.nhti.edu/student-resources/where-can-i-get-help-my-studies/study-solutions-lab/reading-and-learning-sq3r