



Learning Lists for Science 1

How To Study From A Book

Contents Updated: Wednesday, 03 December 2003

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Use the POPQR³ technique:

Preparation		Read
Overview	! Question !	Recall
Preview		Review

A. Preparation

1. Time—allocate a fixed length of time for study
2. Amount—decide how many pages—use page markers:
 - provides guidelines
 - provides limits
 - avoids sense of oppression—fear of large amounts.
3. Check present knowledge:
 - quick survey—2-5 minutes
 - use creative patterns (mindmaps) to jot out your knowledge
 - nothing known—any associations, however remote
 - a lot known—any major theories, names, etc
 - ask questions—different coloured ink—where something is not known.
 - use keywords
 - advantages:
 - provides “anchor points” for new knowledge
 - activates the brain
 - improves concentration
 - gives good mental set.

B. Overview

A general view of what you have to study.

1. The book as a whole—read:

- exterior and title page:
 - publisher's blurb
 - fly-leaf reviews
 - notice the subject, level and approach
 - author and his qualifications
 - date of publication—might be out of date.
- the preface:
 - why the author wrote the book
 - more about the level
 - how it should be used
 - who it is written for
 - outline and structure.
- contents:
 - topics covered
 - sequence and hierarchy of ideas
 - logical organisation of the book.
- index:
 - helps you judge whether book is suitable
 - essential for specific references.
- leaf through the book—look for:
 - chapter and section headings
 - illustrations and graphs
 - NB use a visual guide eg end of a pen
 - trace the shape—eye and arm movements reinforce learning.
 - tables.

2. The chapters:

- go through page by page—look for:
 - section and sub-section headings
 - graphs and illustrations
 - tables
 - footnotes and marginal notes.

D. Preview

More careful than the overview. Initial search of language content.

1. Read headings and sub-headings:

- what topics are treated?
- what is the structure of ideas?

2. Read summaries, results and conclusions:

- provides “anchor points”
- saves time wasting—you know what the author is getting at
- do summaries really summarise?

3. Read first paragraphs—author's introduction to each chapter.

4. Actively select and reject:

- note particularly significant sections
- skip confusing sections:
 - releases tension—helps subsequent study
 - brain works subconsciously
 - tends to fill gaps in knowledge

- later, can attack the problem areas from different directions.

D. Question

1. Formulate questions—write them down:
 - gives purpose to your studying—very important
 - helps concentration
 - keeps you actively participating.
2. Sources of questions:
 - the POP stages—preparation, overview, preview
 - Preparation
 - what didn't I know?
 - what didn't I understand in class?
 - what have other students mentioned?
 - Overview
 - what is the level?
 - what are the main ideas?
 - what do the graphs and illustrations show?
 - Preview.
 - are the conclusions valid?
 - what evidence is there, etc?
 - the book:
 - chapters often begin with questions
 - exercises/exam questions often end chapters.

E. Read

1. Maintain active reading
 - look for answers
 - find the main ideas:
 - of the book
 - of the chapter
 - of the section.
 - find the plan of the book.
2. Continue active selection and rejection:
 - read through
 - expand areas understood
 - skip if necessary—don't get bogged down.
3. make marginal marks:
 - soft pencil—to erase later
 - important blocks of text, mark thus: ||
 - confusing blocks, mark thus: }?
 - don't make notes at this stage:
 - too slow
 - impedes overall understanding
 - encourages copying.
4. Problem areas—questions not answered:
 - note them
 - refer to other text books
 - ask your tutor.

F. Recall

1. Reasons:

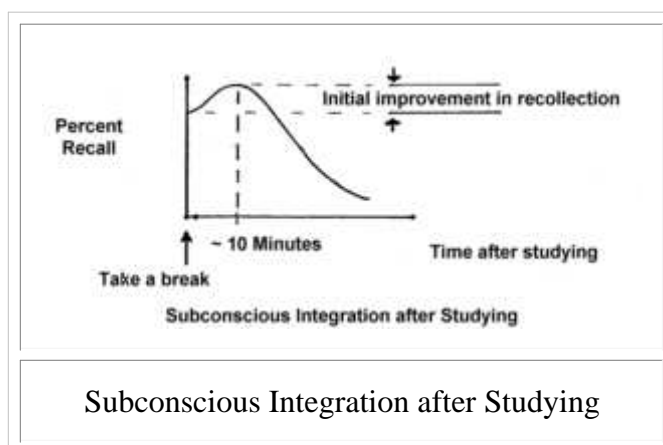
- aids memory
 - helps concentration
 - indicates immediately what is forgotten—re-read
 - forces reconstruction of ideas.
2. Recall often:
- main ideas in each section
 - at the end of each chapter
 - jot down what you recall
 - creative patterns
 - keywords.
3. Time spent on recall is not wasted—it promotes learning:
- improves retention
 - don't just think in terms of “getting through the recommended books”—little learning will occur
 - how much recall:
 - factual material—50-90% of learning time
 - light reading—very little.
4. Re-read as many times as are necessary.

G. Review

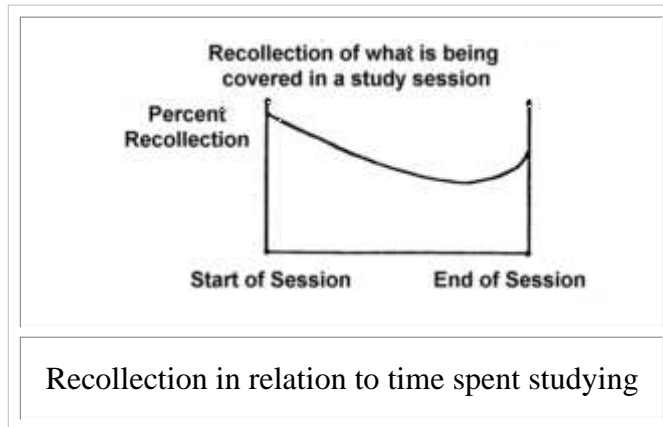
1. Look through the whole of the content area—re-read any difficult bits
2. Review the marginal notes you have made:
 - seem less important—reject
 - select the key areas.
3. Take notes only at this stage:
 - only now do you know what are the significant areas
 - review the author's summaries
 - use your marginal notes
 - use creative patterns and keywords
 - convert creative patterns into graded notes—like these.

H. Taking Breaks

1. Improve recall initially—sub-conscious integration:



2. Fall of recall during study session:



3. Optimum times—approximately:

- 2 minute creative pattern review
- 30 minutes studying—POPQR³
- 10 minute break
- repeat—next topic.

4. Advantages

- rest—releases tension
- allows subconscious integration
- gives peak recall for study session immediately following.

I. Flexibility

1. Stages are not always distinct:

- questioning occurs throughout
- recall should be frequent
- stages can merge, eg overview and preview.

2. Order is not fixed:

- repeat stages if necessary, eg overview/read stages
- put in a rapid review whenever necessary.

3. Stages can be omitted:

- library browsing—mainly overview
- revision—mainly recall and review.

Finally: POPQR³ is not a rigid system—adapt it to the circumstances. But remember—just reading is rarely studying.

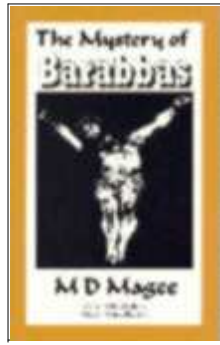
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Ask your public library to order these books
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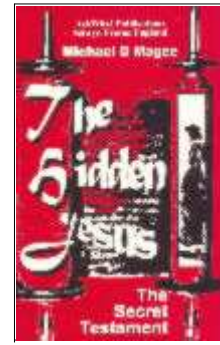
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