Centre for Teaching and Learning

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Increasing Reading Productivity: Framework for Improving Academic Reading [DRAFT]

This is an early draft in progress last updated on 7 July 2023

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Overview

This guide outlines key elements of the reading process to help identify areas where you can increase your reading productivity.

Academic reading is very different from reading for pleasure. It is much more similar to reading for information, but the academic environment adds further differences.

🎯	**Purposeful**	Read to identify facts and arguments
🧠	**Strategic**	Read only parts needed for purpose
	Non-linear	Do not read in order of presentation
✓	**Active**	Read while highlighting and taking notes
	Productive and interactive	Read to write and communicate
📊	**Comparative and cumulative**	Read in context and never just one thing

Academic Reading Framework

Academic reading is **not just turning pages**. It is a complex activity. This framework will help you **evaluate devices**, apps, features and strategies to improve your reading productivity.

ℹ About

This framework is what the Reading and Writing Innovation Lab uses to evaluate tools and strategies for academic reading.

We start from a basic premise:

Academic reading is very different from reading fiction but it even has many differences from reading of other expository texts such as instruction manuals, emails, or general non-fiction.

The Academic Reading Framework looks at academic reading through the lens of its 6 defining characteristics:

1.	Purposeful	Read to identify, summarise and debate facts and arguments.
2.	Strategic	Read only parts needed to achieve the purpose.
3.	Non-linear	Do not read in order of presentation but rather in a way to support 1 and 2.
4.	Active	Read while highlighting and taking notes.
5.	Productive and interactive	Read to write and communicate about 1.
6.	Comparative and cumulative	Read in context of other writing and never just one text in isolation. ("Read literatures, not papers.")

Each of these characteristics has implications for academic readers not just as they are selecting their technologies but also as they are choosing the right approach to their reading. Here is an explanation of these specifics:

➡ Purposeful

Academic reading is always done for a specific purpose. This purpose is to gain the ability to identify, summarise, and debate arguments and facts.

Purpose of academic reading

1. Identify	Arguments and facts
2. Summarise	
3. Debate	

This means that an academic reader will be approaching their texts very differently than somebody who is starting to read a story whose main purpose is to share an experience or perhaps to be able to say 'they've read it'.

Points 2 and 3 will also be different from readers of an instruction manual or a public notice.

What it means for choosing the right approach

This means that an academic reader should not be starting to approach a piece of reading to be able to say 'I've read this' but rather to be able to say 'this text claims Y' and 'given X, it is or is not a justified claim'.

The approach the reader chooses will vary from text to text but it will rarely be simply sitting down and reading page after page.

What it means for choosing tools

Many default tools do not take into account the purposefulness of academic reading. When choosing the tool such as an e-reader, PDF reading app, or a note taking app, an academic reader may not find features that would support their main aim.

⁉️ Strategic

The purposefulness of academic reading means that academic readers have to read strategically. There are too many things to read without making some choices. But the strategies the academic reader must deploy are not just to reduce the number of things one reads, they are also to develop deeper and broader understanding in context that is difficult if not impossible to achieve by 'brute force' at high volume.

The choices academic readers make:

1. What to read
2. Which parts of any text to read
3. In what order to read the text
4. What mode of engagement to deploy

Academics will only read the texts and parts of text that help them achieve the purpose of identifying and debating the relevant facts and arguments.

This may mean reading some texts very carefully, skimming others, or only reading selected sections of others.

One issue with strategic reading is that it is often recommended as an approach to deal with overload. But in fact, it is the superior approach to develop an understanding of an entire field. This is a theme that is common to all the characteristics of academic reading.

What it means for choosing the right approach

For an academic reader being strategic means more than being selective about what they read, it means also choosing a reading approach. The academic reader will have to switch between different modes depending on what text they are reading with what purpose in mind.

The academic reader will switch between two modes:

- narrative reading,
- ruminative reading
    - skimming
    - scanning.

The difference between narrative and ruminative reading is essential to the academic reader's success. (See Appendix for details).

What it means for choosing tools

Not all tools are equally well suited to different modes of reading. For example, it is difficult to skim a text to get an overall sense of its direction by listening to it from beginning to end. But it is ideal to listen while reading to help maintain focus. Listening can also be done in the background to achieve a similar result as with skimming.

Equally, a tool with slow page turns like an e-reader or a tool with a small screen like the smartphone will not be as useful for skimming as a computer with a large screen. Many of these elements can be remediated by the designers of the tools by providing better navigation features.

Also, other advantages of these devices such as the non-reflective screen of an e-ink reader or the short chunks of text on the smartphone screen may outweigh the disadvantages. Readers can reduce the downsides further if they increase their fluency in the use of the existing affordances.

But it is important that the reader is aware of the trade offs they are making.

In choosing a tool, the academic reader will have to keep in mind what mode of reading they will use it for and how to best support that mode using the features and affordances available.

🔁 Non-linear

The most distinctive surface aspect of academic reading that sets it apart from narrative reading is that it is non-linear. The presentation of academic texts does not reflect the sequence of discovery or composition. And the reader does not always approach the text with the same level of knowledge to be able to make sense of it in the order in which it was organised. In fact, some longer texts recognise this and offer different orders of reading in the introduction.

What it means for choosing the right approach

Very often the best order of reading an academic paper or a chapter in a book means starting from the end or even in the middle depending on the purpose. The reader may start with conclusions to help them identify the key concepts and then trace their development through the previous text.

This is well recognised by reading experts and reflected in the guides to academic reading, yet it still seems to come as a surprise to academic readers at all levels. Many have adopted a similar strategy instinctively and then feel uneasy about this while others simply struggle through the texts linearly.

This is made worse by many guides recommending this approach not as a way to develop a deeper understanding of the text but rather as an expedient of time. Non-linear reading seems incompatible with close or deep reading, yet, it is a necessary technique if a reader is to develop sufficient cognitive map of the whole that then aids in understanding individual parts and how they fit together.

Non-linear reading does not just mean an alternative order to reading, it also means reading the same parts of text more than once and approaching them in different context. It may also not happen in a single session or it may be interrupted by other readings (see below).

What it means for choosing tools

Any tool for reading academic papers should make it easy to jump back and forth in different sections of the text. This is not always foremost in the minds of the designers of these tools.

Tool designers should always expose the table of contents or allow the reader to create their own. They should encourage the reader to develop and maintain cognitive maps of the text.

✍ Active

Academic readers are never simply sitting there and reading. They are always doing other things while reading. They highlight, take notes, connect highlights to others, etc. This makes the process very different from other types of reading which needs to be reflected in the strategies and tools.

What it means for choosing the right approach

Simply highlighting or taking notes while reading can increase the level of understanding while reading.

But the academic reader must also make sure that they direct these active reading strategies towards the purpose for which they are reading and adjust them to the mode they are reading in.

For example, readers can highlight important passages but they can also highlight key dates or data points. They may highlight to help them understand the core of the passage or they may highlight key sections they want to return to after their first skim.

The same goes for notes which should be aimed less as aids to memory and more as guides to understanding but also as something that leads towards the output of reading – which is the next feature of academic reading.

What it means for choosing tools

Choosing a tool that makes it easy to make notes or highlights on text is important. But it is also important to enable the reader to manipulate and organise those notes and highlights later.

Sometimes those two aims are in opposition to each other. It is very easy to use a digital stylus to make scribbles on top of a PDF, but then transforming the notes into a knowledge management system may take more effort.

The sorts of notes, academic readers take also differ by context. They may do so of their reading while sitting comfortable and reading on an e-reader or they may do most of it while sitting at a computer.

Deciding which tool to use for what situation and how to integrate the notes from both is a part of the strategy of academic reading. And making those decisions easier is one of the main aims of the Reading and Writing Innovation Lab.

📑 Productive and interactive

Academic readers read to write. When they write, they write to communicate and otherwise interact with others.

But writing is more than just writing about something we read, it is also a way of helping us formulate knowledge and exposing to ourselves the gaps we may have papered over in our head.

At any rate, writing and speaking is a part of academic reading much more than with other kinds of reading and our strategies and tools need to reflect that.

What it means for choosing the right approach

The academic reader should approach reading as a part of the writing process. "20% of reading is writing." is not a bad formula to adopt.

Writing summaries of what the arguments and facts contained in what they read, is one of the core jobs of academics. But these summaries should be aimed at others rather than the readers themselves. Writing summaries as explanations for others is much more effective than simply writing them to replicate the core point. The reader/writer is oriented towards a deeper kind of understanding when they expect someone to ask questions.

This is made even more powerful when the reader is actually engaging in a productive dialogue with others and exposes their own summaries to the understanding of other readers or people who have not done the reading.

Also, the summaries do not necessarily need to be narrative – even though that provides useful opportunities to develop as an academic writer. Creating outlines, mind maps and concept maps can be just as valuable and often going back and forth between the narrative and structured summary can lead to much deeper cognitive engagement.

Another important aspect of academic reading is personal interaction. Practicing academics will often approach a text following or in preparation for a conversation about the topic. This could be with peers, students or often the author of the text themselves. (See below).

What it means for choosing tools

Reading tools are not necessarily the best for doing extensive writing. So it may not be the most important aspect to look at. But some tools such as Zotero make it possible to write comments of entire readings rather than simply annotating individual sections.

Because no tool is going to be most effective in all aspects of the intensive and extensive work required of an academic reader, the reader may have to sacrifice some productivity and ease of interconnectedness and not chose a tool that is both good at reading and taking notes. For example, an external knowledge management tool like Obsidian, Notion may be a better way to store insights even if the connection to the text read is not automatically maintained.

Equally, the reader may choose to handwrite notes or draw mindmaps which they then keep separate from their reading annotations.

This and the following aspect of academic reading are probably the least well supported by reading tools. Some reading apps such as MarginNote or LiquidText allow for connecting notes and highlights into exportable mindmaps. Yet, they may break other aspects of the reading such as keeping track of references.

But because the interaction with the ideas does not just happen in the text itself, the academic reader may want to seek out conversations among others – this used to be limited to conferences, seminars, etc. However, now they may choose video or audio recordings of conversations (YouTube recordings of lectures or podcast interviews with book authors). This will give them further avenues of understanding.

📈 Cumulative and comparative

Academic reading means never reading just one thing. Academic readers don't read papers, they read literatures. And they do not just read papers and books one after the other, they are reading them in a comparative manner.

Just like with individual papers or chapter, academics are also not reading the multiple texts in a linear way. The same purpose-driven strategy and non-linearity that works well for individual texts applies to a collection of texts – perhaps even more strongly.

The way academic readers approach a new problem will depend on their existing familiarity with the field. They may start by collecting papers based on a key-word search and then read abstracts or introductions to some. This will lead to a better familiarity with the key concepts and problems. They will then proceed to read some in more detail and reread others in a new light.

At the end of the process, they will have a deep sense of familiarity with their field. They will have also used interaction (both written and in-person) with authors of the readings to develop a personal connection to their subject. It is not insignificant that much of what many successful academics read was written by somebody they know or they talked about with someone who knows

them. This is not just a matter of personal familiarity but also a sense of the writers' purpose, their intellectual history, connections to the field and the reader themselves.

The reader is also more accountable to the writer and may choose a deeper strategy.

What it means for choosing the right approach

We should never expect our reading to end with one book or one paper. This means that the same strategic selection academic readers apply to individual readings needs to apply to entire literatures.

Nobody should expect to approach their field in the same way they approach reading their favourite fiction series. They will need to read widely before they read deeply to get a sense of the overall shape of the field. Combine preliminary surface reading with deep reading and cycle through as they develop.

The same strategies that apply to reading individual readings apply across readings, as well.

What it means for choosing tools

Most default tools for reading do not take into account this interconnected nature of academic reading. They focus on opening and presenting individual files and leave all the comparative work up to the reader. This is one of the reasons why many people still print some of their readings.

Only recently have some tools such as MarginNote and LiquidText pay attention to this aspect of reading by allowing the combination of individual files into a single reading project.

Equally, the latest version of Zotero has integrated notes that can be organised across individual reading.

Readwise.io is another tool that allows reviewing and connecting notes across a number of readings.

Their integrations with notetaking apps such as Obsidian or Notion further enables this broader approach to reading.

Many e-readers, on the other hand, limit their ability to organise multiple readings to folders.

Readers do have recourse to using tools such as Calibre for the management of e-books but these are often not ideal when it comes to combining ebooks, academic papers and do not take into account needs such as reference management. Reference managers, on the other hand, are often not aware of

the breadth of hardware tools readers may be using to read and annotate their texts.

Equally, publishers of online texts often build complex systems for people to read multiple readings within their catalogue but do not take into account that no literature is confined to a single publisher.

The overarching implication is that when choosing a reading tool, the academic reader will need to think about the workflow of getting multiple files to it and retrieving the notes in a way that can be brought together in a knowledge management context. This will include some compromises and inefficiencies.

Beyond Decoding: Cognition of Academic Reading [DRAFT Notes]

Note: These are preliminary notes on the subject.

The intention behind the Academic Reading Framework is to shift the focus on 'decoding' stressed in the well-known 'simple view of reading' which equates reading comprehension with decoding and language comprehension. The language comprehension that is mostly sufficient in the reading of stories, lists, or simple non-narrative texts, simply cannot be taken for granted in academic reading where understanding of individual words or sentences often depends on understanding deeper context.

It is important to remember that the 'simple view of reading' was designed to explain the needs of readers in the early stages of developing their reading skills. These readers often struggle with reading individual words or short sentences that they would otherwise understand perfectly well. This is not sufficient for helping us come to grips with needs of readers at the level of entire texts, let alone academic literature.

That does not mean that decoding may still not present a significant block to an academic reader but simply solving decoding is not enough particularly when it is done at the expense of allowing the reader to build larger cognitive maps of their reading.

For example, listening to texts is a valuable technique for all readers to enhance their understanding, help with focus, and reduce tiredness. It is often the only decoding option for readers with dyslexia and visual impairments. But these readers than need to develop strategies for approaching complex texts and collection of texts that a listening-only approach makes more difficult.

This section will try to outline an approach for thinking about cognition at the two levels: decoding of words and sentences and decoding of larger more schematic meanings required when developing an understanding of academic readings.

Cognitive load model

The academic reading frameworks looks at reading as complex activity that cannot be simply described through the perspective of cognition. However, cognition is still of central concern and many of the barriers readers encounter, they experience as primarily cognitive or they show up through cognition.

That's why the concept of cognitive load is a useful lens to use to interpret the readers experience even though the activity itself seemingly does not have a straightforward purely cognitive explanation.

Beyond the 'simple view of reading'

The cognition involved in reading is complex but for the purposes of early reading instruction, it can be simplified into a simple formula 'reading comprehension = decoding + language comprehension'. This means that once we can decode the letters that make up a word, as long as we can understand the word or the sequence of words, we understand what we are reading.

Even at the introductory level, we know that much more is going on but adding that complexity turns out to be unnecessarily complicated for beginner readers of simple texts such as stories. But with academic reading we need to bring all that complexity back in. Comprehending an academic text is simply not just the result of decoding letters into words and converting words into meaning.

Articulation of Reading

Reading is a complex process that happens across multiple levels. We need to pay attention to all of them to capture what we need. Any one of these levels can serve as a source of increase of cognitive load or even become a barrier to success.

💬	**Decoding**	Letters to words Words to sentences
🧠	**Understanding**	Sentences to ideas
🎯	**Strategic attention**	Read first / last Deep / surface
📋	**Planning**	Time Place
🚚	**Logistics**	Finding the readings Opening files

From decoding to encoding

Even the notion of comprehension needs to be expanded from the simple view of being able to retrieve meanings of words contained in text. Readers are in a very real sense creating meanings in their minds during the process of reading. Therefore, the process of decoding is coupled with encoding. As readers decode additional words and segments, they are actively building a semantic picture (for lack of a better word). Each additional segment being read has the potential of completely rewriting that picture.

This is simply part of any language comprehension (spoken and written) but in most language comprehension situations, the cognitive load is so insignificant, we can simply think of it as a black box. However, academic reading places much more demand on the cognition of the reader and requires much more effort placed into the encoding that we can no longer think of it as 'simple comprehension'.

Pre-coding and re-coding

Also, similarly with second language learning, we need to pay much closer attention to the activation of knowledge and focus that happens prior to reading. In order to deal with the complexity of the text, the academic reader needs to develop a map of content that make the cognition required for decoding:encoding manageable. This is particularly essential for beginner academic readers who are additionally struggling with the conventions of academic writing and the ways of communication conventional in their new field.

This step can be called pre-coding and it may happen in various ways – both immediately before (and even during reading) or as part of the process of engagement with the reading and its context (as we saw, academic reading happens at the level of literatures and not individual texts).

To capture the full scope of academic reading and comprehension, we also need to think beyond the moment of 'reading' (decoding:precoding). The complete understanding develops through active engagement often expressed through comparison, notes, writing or graphical organisation that takes the encoded information and re-codes in a way that allows the reader to integrate the disparate sources.

## Manipulation as a contributor to cognitive load

This whole process happens both at the moment of reading as well as over time. It also happens in space with a physical dimension. The reader has to engage with the text to take notes, create highlights, organise excerpts and notes, place it in a position where it can be compared. Doing this more or less effectively can increase or decrease the cognitive load required for decoding:encoding and prevent effective recoding (which is the true purpose of academic reading). We therefore must pay close attention to the whole process. (We includes readers, educators, publishers, tool creators.)

Graphical summary

The whole picture can be summarized with a simple graph.
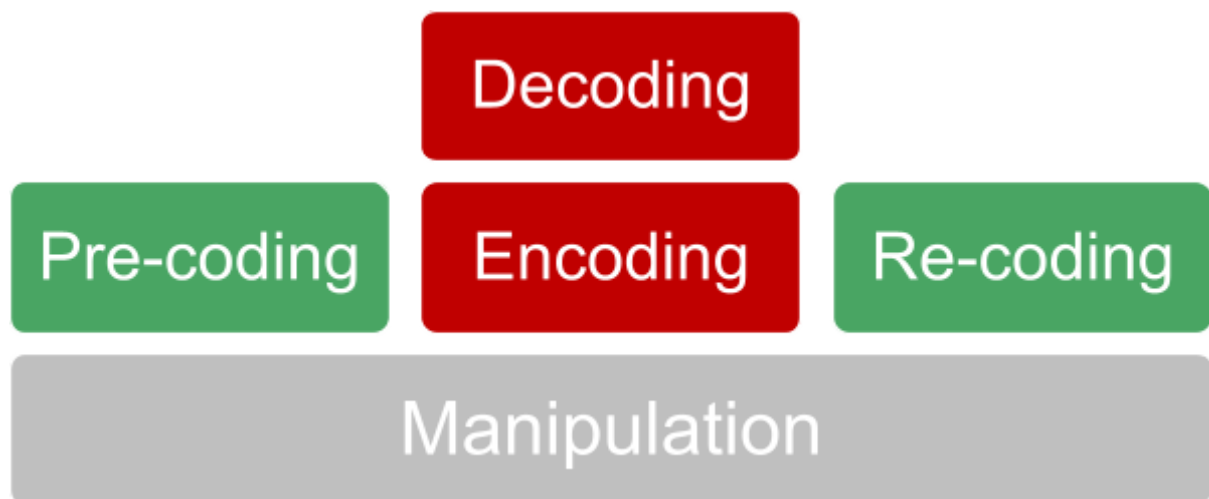
However, this simple representation assumes too much linearity. On closer inspection, a much more complex picture of mutual feedback emerges that could be summarized graphically as follows.
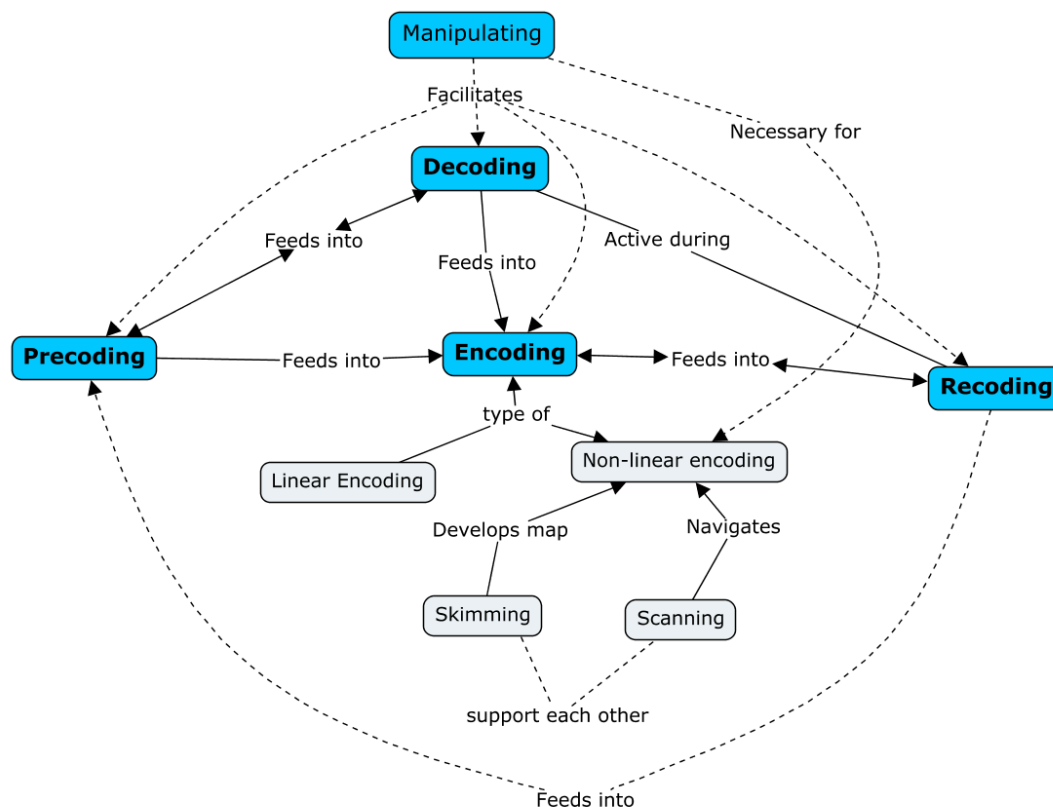
Appendix: Narrative vs Ruminative Reading (some initial notes)

Narrative reading mode

In narrative reading mode, the reader follows the text and lets the story unfold. They build their understanding by following the writer's design. They acquire sufficient background, come to an understanding of key concepts, and finally they will come to an understanding of the 'real' meaning of the text.

Unfortunately, this linear conception of reading is almost never suitable to academic texts. It fails to account for the fact, that fictional narratives are parasitic on pre-existing knowledge by the reader. The reader of a story already understands key schemas that the narrative simply fleshes out. The purpose of the narrative reading is as much to embody, replay or enjoy the process as it is to learn something new. Let alone in such a way that could be reduced to identifying and debating arguments.

With academic reading this is almost never the case. The expert in the field, who has sufficient background knowledge will rarely need to follow along with the entire narrative in them same way they do with a story. They will frequently seek out key points of new information (scanning) or to get a sense of the general argument (skimming) and only return to narrative mode for sections of the text or if they feel the structure of the argument is relevant in and of itself.

On the other hand, the novice academic reader will not have sufficient background knowledge to follow the text from beginning to end and hope to have the same level of understanding at the end that they will with a conventional narrative. Their cognition will be quite literally swamped with new concepts, leaving no room for any understanding.

This is why novice readers frequently report reading texts all the way through without having any sense of the overall message and often not even any of the particulars. And not only have they not developed any understanding of that particular text, they also have not contributed to their ability to better understand future readings.

Ruminative reading mode

An alternative to the narrative mode is the ruminative mode. Ruminative mode is non-linear, multimodal, and non-monotonic. On the surface, it can be described as a combination of skimming and scanning, or reading for gist combined with seeking specific information.

Domain experts reading deep within their expertise turn to this mode as a matter of convenience. They may alternate between narrative and ruminative modes depending on the level of engagement they wish.

Switching to this mode is essential for novice readers to build a deep semantic map of meaning. Without it, reading the text narratively is almost as useful as reading it in a foreign language.

Another aspect of the ruminative reading mode is that the reader is not confined to a single text. In fact, interleaving the reading of different texts in a ruminative mode can help the reader in the development of larger maps of meaning.

Returning to texts

Thinking about these modes is also essential when we consider how often readers of non-narrative texts return to them to find some information and confirm an intuition about them. The modes may be different on different visits or each visit may employ a different mode.

For example, a reader may choose to read narratively on their first encounter and return with a more ruminative frame of mind to look up information for later use. But another reader may choose to engage with the text in a ruminative mode on their first or even second encounter and only engage with it narratively once they have built a rich enough semantic map to be able to sustain the effort.