On Reading Academic Literature *(Strategically)*

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Strategically reading academic or scholarly material requires that you identify and extract very specific components from what you read. In particular, you should be able to concisely and accurately identify an author's overarching or controlling question and the answer to that question, often called the "thesis."

What you must first do, then, is try to identify the author's *intention*.

In identifying a controlling question and thesis many people confuse the thesis with the "topic." But if the thesis does not *answer the work's central question*, it is not a thesis. For instance, "the slave trade" is not a central question, whereas, "How did slaves preserve African cultures in their everyday lives?" is a central question. "Teen behavior," is likewise not a central question, while, "How do library regulations and practices contribute to the marginalization of young people?" is. And without confidence in knowing an author's question/thesis, very little of the rest really make usable sense.

The very reason an academic author writes at all, especially academic authors, is to answer or respond to particular research questions that have grown out of the preceding scholarship – it is not about creative experimentation and artistic license. So there really is not very much interpretation at this stage: one's central research question and answer must be clear and unequivocal. Scholarly work, articles *or* books, meet this same standard (though with different levels of detail of course) and should assess previous work, identify gaps, holes, or errors, and *then* build the new work in response to those gaps, holes, or errors.

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So, how do you do all this?
As a graduate student you have and will continue to read a good deal of academic scholarship. And that work abides a very particular kind of "discourse pattern," or way of unfolding a story/argument/discussion. Once you fully recognize this academic discourse pattern, the potential for improving your reading efficiency, comprehension, and facility with the work your read can dramatically improve. I promise you this.

So, the first thing to consider here, then, is that reading an academic work, an article *or* a book, the same way one conventionally reads a novel (from the first page through the last) is arguably the *least* efficient way to understand the work.

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As you may have gathered in any literature courses you may have taken, fiction literature has been privileged in many domains of librarianship, especially youth librarianship. Fiction, too,

was commonly used to teach us how "to read" in the first place. So reading this way is a deeply ingrained practice.

Few of us, however get, or take, the opportunity to learn *other* practices or strategies.

Consequently, we read even academic texts as if they began "Once upon a time," meaning we read it from the first page through to the last. Students have actually told me that they felt like they were "cheating" if they read academic work more strategically, as I strongly advocate, and as I will discuss in detail presently. As if "skipping to the end" was like reading the solution of a "who-done-it" mystery before you actually "got there" in the story. I understand what the student meant. It can *seem* as though you are doing something nearly illegal! It is a deeply ingrained practice.

But I recommend breaking it!

At the very least, if you stay committed to the "fiction approach" (reading from first page through the last) do so with the awareness that you have made a choice. Do not, however, suffer under the illusion that you are "just reading." There are many different ways to "read."

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The very most important thing you need to identify in an academic work is its central question.

Without mastering this core/central question you are not likely to recognize the answer, otherwise known as the "thesis," when you see it, and thus you will also be challenged to determine the differences between major concepts and supporting details – if, that is, you do not altogether confuse them.

What academics do, though, when they write, is first respond to the writing and research of prior scholarly work. [Actually, fiction writers do that as well, but that is another *huge* topic not suited for our present purposes.] Authors either disagree entirely or in part with what has come before, or they intend to extend into new areas and build on what has come before.

Here is an example of what this means in practical terms… in scholarship on youth services, young adult services in particular, the scholarship on the 1980s was asking certain kinds of questions about library services and young people. More recent work, in the 1990s, represents a break from those questions. Scholars researching and writing during the 1990s began asking different questions.

Thus, a careful student of youth services could pick up a published article written in the 1980s and be quickly able to situation it within that body of research. Same with scholarship written in the 1990s and after. Not all topics and scholarship can be broken neatly into decades, of course, but one must be alive to the patterns in the secondary scholarly work in order to derive the most meaning from it.

In any event, the *question* is the thing.

How, then, to look for and build confidence that you have identified the central question of a particular work? It is actually not a "secret." It is something you already know how to do.

But if there *is* a secret, it lies in re-assembling the author's original outline.

Try to remember, either as a student or teacher, the "5-paragraph paper" concept from grade school? We know that to write formal treatments of serious topics effectively we ultimately need to write with and from an outline. But few of us remember that important fact *when we read*!

The author has spent a great deal of time organizing material into an outline: the topic, the question, the thesis (all in the introduction); the supporting details (in the "body"); then a restatement of the thesis - the question's answer - in the end (in the conclusion), with perhaps a comment as to where the next step lies or surfacing new/next questions. This is the architecture of our academic discourse pattern.

Thus your job as a reader, at least a reader of academic work, is made considerably easier by re-assembling the author's outline.


Basic Five Paragraph Essay Outline Format

I. Introduction -- one paragraph telling major points that will be contained in the essay

A. Thesis statement - the main point of the entire essay
B. main point 1
C. main point 2
D. main point 3
E. transition sentence

II. Body -- three paragraphs (can be expanded for longer essays)

A. main point 1 topic sentence (tells paragraph main idea)
1. support sentence
2. support sentence
3. support sentence
4. (more sentences can be added as needed)
5. transition sentence

B. main point 2 topic sentence (tells paragraph main idea)
1. support sentence
2. support sentence
3. support sentence
4. (more sentences can be added as needed)
5. transition sentence

C. main point 3 topic sentence (tells paragraph main idea)
1. support sentence
2. support sentence
3. support sentence
4. (more sentences can be added as needed)
5. transition sentence

III. Conclusion -- one paragraph that summarizes the main points covered in the essay

A. summarize main point 1
B. summarize main point 2
C. summarize main point 3
D. synthesize the main points into one strong statement that gives your essay closure (wrap up sentence)

Remember the grammar school essay outline?

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So, how to do that? Well, not every single scholar writes in *precisely* the same way. Certainly scholars from other cultures do not write with the same discourse pattern as we use here in the US. Scholars from England, for instance, have created a discourse pattern in which they typically do not state the thesis at the beginning of an article. They build toward a crescendo in which they let lose their answer at the end. Other cultures differ in other ways as well.

Still, there are observable and repeated structural elements to our discourse pattern in the U.S. The same pattern is repeated in expository speeches as well. Undergrad Speech 101 advanced it too:

1. Tell 'um what you're going to tell 'um,
2. Tell 'um,

3. Then tell ‘um what you just told ‘um?

Well, that’s *our* discourse pattern.

Therefore, I recommend “reading backwards.”

This method can help better identify the contents embedded in our discourse pattern, especially if you are struggling with some guilt about “cheating.” Indeed “reading backwards” is breaking a very old and established pattern. Hopefully, though, you are also starting a new and more advantageous one.

“Reading Backwards”

Step 1: “Reading backwards” is simply reading the final *section* of an academic work first, very carefully, and then reading the rest of the sections in reverse order. One reads the final section carefully because one is looking for very specific things: terms or other vocabulary that “sums up” or “reviews” what the author has presumably just laid before the reader throughout the rest of the book or article. One is also looking for a review of the author’s major categories, supporting arguments, evidence or examples.

Step 2: Only after strategically scrutinizing the concluding section does the reader return to the introductory material. But now one is looking to *confirm* the suspicion of the central question/thesis that ought to have surfaced in the conclusion or final section. Often times it is easier to *confirm* the Q&A in the introduction, rather than finding it there from the start, because it is the introduction of an academic piece that authors actually write last.

Yes, that’s right! Authors write the introduction *last*. Logically, too, because it is only *after* an author has completed writing the article that they can properly introduce it.

> [Often times when I’ve worked with young adults, especially with groups of YAs who do not know each other, I begin a session by asking one person to confirm that they do NOT know the person next to them. When they confirm it, I then put one of them on the spot: “Please stand up and introduce the person sitting next to you.”
>
> They say, “I can’t. I don’t know them.”

I push a bit harder… "Ok, then please tell us about that person."

"Dude," they respond, "I just told you. I don't know them!"

"OK, then," I reply "why do you guys think that you can write an introduction to your paper first? No *wonder* you feel that you have 'writer's block.' You don't know what to introduce yet!"]

If you do not have confidence about the consistency and agreement of the Q&A between the concluding section and the introduction, you simply must go back to find it until you are confident.

This is the most critical juncture in approaching mastery over an academic piece.

If one skips this step, and proceeds without confidence, one risks both not only having a confusing reading experience as well as losing an understanding the author's entire project as well. One also risks being able to properly connect the work at hand with the field in which it belongs.

So I strongly recommend not proceeding to read the "middle" or the "body" of a work until you are confident that you have identified the Q&A. In other words, don't read chapter 2 or sub-section 2 until you have identified the book's question and thesis in the concluding section *and* the introduction.

Step 3: Once you are confident that you know what the author is asking, and what the thesis is, now you are prepared to critically engage the author's main themes, evidence, and methods. Likely, too, you will be able to read *more* critically as well, because you know where the author is going and how they got there – or did *not* get there, as the case may be.

As part of this new habit or practice, of "reading backwards," I recommend reading the major "middle" or "internal" sections from the back to the front. Thus, if there are, say, 3 major internal subsections, read #3 first, then #2, and finally, #1. This pattern will better help you break the age-old habit of fiction reading techniques for non-fiction scholarship.

If there are no obvious subsections, you will need to read the topic sentences of paragraphs until you find signal language announcing something like "So now we turn to the third instance in which…" or other transitional language similarly alerting the reader that we are moving from one instance, example, data set, scenario, etc., to another. Remember "transitions?" If you have ever taught writing, you know that it is one of the most difficult things to teach young students – transitioning from one topic to another. But now is the time to use that knowledge of academic discourse patterns to your own advantage.

Here is what one gains from "reading backwards:"

- a stronger confidence in mastery over the material
- a better and more accurate ability to summarize or digest a work

- a sense of proportionalities (between the larger and more abstract intentions of the author and the details supporting a thesis)
- a stronger vantage point from which to analyze and criticize an author's work (to identify holes or gaps in thinking or evidence or argument)
- a more efficient capacity to contextualize a particular work within a larger body or context
- an ability to imagine the next vistas from which to launch new thinking and new questions

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Now, reading other kinds of work, as alluded to earlier, such as professional practitioner journals, for instance, is different.

Those writing styles tend toward highlighting particular current practices or practical applications. But they are not commonly connected to larger trends or patterns. Nor do they commonly offer the depth of building upon previous practices, trends, patterns, or history that defines scholarly literature.

So, one reads the scholarly literature for different things, and in different ways, than "professional literature." Both types support our work. But they do so differently. Simply knowing this fact can help tremendously in understanding and gaining insight into professional life. But actually approaching these features with different reading strategies can help take your insights to new levels.

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Finally, these skills have application and relevance, of course, not only to your work in this course. They can help improve the quality of your reading experience in other SLIS courses, as well as toward your final e-Portfolio presentations.

In my experience, few *teachers* feel they have "permission" themselves to do something like "reading backwards." We are indeed talking about breaking some very well-worn habits. On the other hand, as young people practice strategic reading of our academic discourse pattern (*and it does take practice*) their comprehension and mastery increases. Also, that age-old problem of reading "text books" can become substantially lighter as well.

One of the *worst* thing teachers can do, in encouraging young people to read text books, is to perpetuate the reading of them as though textbooks were the same way as the works of Marcel Proust or James Baldwin or Joan Didion or Sandra Cisneros.

How to Read a Paper

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ABSTRACT

Researchers spend a great deal of time reading research papers. However, this skill is rarely taught, leading to much wasted effort. This article outlines a practical and efficient *three-pass method* for reading research papers. I also describe how to use this method to do a literature survey.

Categories and Subject Descriptors: A.1 [Introductory and Survey]

General Terms: Documentation.

Keywords: Paper, Reading, Hints.

1. INTRODUCTION

Researchers must read papers for several reasons: to review them for a conference or a class, to keep current in their field, or for a literature survey of a new field. A typical researcher will likely spend hundreds of hours every year reading papers.

Learning to efficiently read a paper is a critical but rarely taught skill. Beginning graduate students, therefore, must learn on their own using trial and error. Students waste much effort in the process and are frequently driven to frustration.

For many years I have used a simple approach to efficiently read papers. This paper describes the 'three-pass' approach and its use in doing a literature survey.

2. THE THREE-PASS APPROACH

The key idea is that you should read the paper in up to three passes, instead of starting at the beginning and plowing your way to the end. Each pass accomplishes specific goals and builds upon the previous pass: The *first* pass gives you a general idea about the paper. The *second* pass lets you grasp the paper's content, but not its details. The *third* pass helps you understand the paper in depth.

2.1 The first pass

The first pass is a quick scan to get a bird's-eye view of the paper. You can also decide whether you need to do any more passes. This pass should take about five to ten minutes and consists of the following steps:

1. Carefully read the title, abstract, and introduction
2. Read the section and sub-section headings, but ignore everything else
3. Read the conclusions
4. Glance over the references, mentally ticking off the ones you've already read

At the end of the first pass, you should be able to answer the *five Cs*:

1. *Category*: What type of paper is this? A measurement paper? An analysis of an existing system? A description of a research prototype?
2. *Context*: Which other papers is it related to? Which theoretical bases were used to analyze the problem?
3. *Correctness*: Do the assumptions appear to be valid?
4. *Contributions*: What are the paper's main contributions?
5. *Clarity*: Is the paper well written?

Using this information, you may choose not to read further. This could be because the paper doesn't interest you, or you don't know enough about the area to understand the paper, or that the authors make invalid assumptions. The first pass is adequate for papers that aren't in your research area, but may someday prove relevant.

Incidentally, when you write a paper, you can expect most reviewers (and readers) to make only one pass over it. Take care to choose coherent section and sub-section titles and to write concise and comprehensive abstracts. If a reviewer cannot understand the gist after one pass, the paper will likely be rejected; if a reader cannot understand the highlights of the paper after five minutes, the paper will likely never be read.

2.2 The second pass

In the second pass, read the paper with greater care, but ignore details such as proofs. It helps to jot down the key points, or to make comments in the margins, as you read.

1. Look carefully at the figures, diagrams and other illustrations in the paper. Pay special attention to graphs. Are the axes properly labeled? Are results shown with error bars, so that conclusions are statistically significant? Common mistakes like these will separate rushed, shoddy work from the truly excellent.
2. Remember to mark relevant unread references for further reading (this is a good way to learn more about the background of the paper).

The second pass should take up to an hour. After this pass, you should be able to grasp the content of the paper. You should be able to summarize the main thrust of the paper, with supporting evidence, to someone else. This level of detail is appropriate for a paper in which you are interested, but does not lie in your research speciality.

Sometimes you won't understand a paper even at the end of the second pass. This may be because the subject matter is new to you, with unfamiliar terminology and acronyms. Or the authors may use a proof or experimental technique that you don't understand, so that the bulk of the paper is incomprehensible. The paper may be poorly written with unsubstantiated assertions and numerous forward references. Or it could just be that it's late at night and you're tired. You can now choose to: (a) set the paper aside, hoping you don't need to understand the material to be successful in your career, (b) return to the paper later, perhaps after reading background material or (c) persevere and go on to the third pass.

2.3 The third pass

To fully understand a paper, particularly if you are reviewer, requires a third pass. The key to the third pass is to attempt to *virtually re-implement* the paper: that is, making the same assumptions as the authors, re-create the work. By comparing this re-creation with the actual paper, you can easily identify not only a paper's innovations, but also its hidden failings and assumptions.

This pass requires great attention to detail. You should identify and challenge every assumption in every statement. Moreover, you should think about how you yourself would present a particular idea. This comparison of the actual with the virtual lends a sharp insight into the proof and presentation techniques in the paper and you can very likely add this to your repertoire of tools. During this pass, you should also jot down ideas for future work.

This pass can take about four or five hours for beginners, and about an hour for an experienced reader. At the end of this pass, you should be able to reconstruct the entire structure of the paper from memory, as well as be able to identify its strong and weak points. In particular, you should be able to pinpoint implicit assumptions, missing citations to relevant work, and potential issues with experimental or analytical techniques.

3. DOING A LITERATURE SURVEY

Paper reading skills are put to the test in doing a literature survey. This will require you to read tens of papers, perhaps in an unfamiliar field. What papers should you read? Here is how you can use the three-pass approach to help.

First, use an academic search engine such as Google Scholar or CiteSeer and some well-chosen keywords to find three to five *recent* papers in the area. Do one pass on each paper to get a sense of the work, then read their related work sections. You will find a thumbnail summary of the recent work, and perhaps, if you are lucky, a pointer to a recent survey paper. If you can find such a survey, you are done. Read the survey, congratulating yourself on your good luck.

Otherwise, in the second step, find shared citations and repeated author names in the bibliography. These are the key papers and researchers in that area. Download the key papers and set them aside. Then go to the websites of the key researchers and see where they've published recently. That will help you identify the top conferences in that field because the best researchers usually publish in the top conferences.

The third step is to go to the website for these top conferences and look through their recent proceedings. A quick scan will usually identify recent high-quality related work. These papers, along with the ones you set aside earlier, constitute the first version of your survey. Make two passes through these papers. If they all cite a key paper that you did not find earlier, obtain and read it, iterating as necessary.

4. EXPERIENCE

I've used this approach for the last 15 years to read conference proceedings, write reviews, do background research, and to quickly review papers before a discussion. This disciplined approach prevents me from drowning in the details before getting a bird's-eye-view. It allows me to estimate the amount of time required to review a set of papers. Moreover, I can adjust the depth of paper evaluation depending on my needs and how much time I have.

5. RELATED WORK

If you are reading a paper to do a review, you should also read Timothy Roscoe's paper on "Writing reviews for systems conferences" [2]. If you're planning to write a technical paper, you should refer both to Henning Schulzrinne's comprehensive web site [3] and George Whitesides's excellent overview of the process [4]. Finally, Simon Peyton Jones has a website that covers the entire spectrum of research skills [1].

6. A REQUEST

I would like to make this a living document, updating it as I receive comments. Please take a moment to email me any comments or suggestions for improvement. You can also add comments at CCRo, the online edition of CCR [5].

7. ACKNOWLEDGMENTS

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