ONE WAY TO READ A SCIENTIFIC PAPER

Step 1. Read the last paragraph of the introduction first.
This advice sounded bizarre to me at first. But, not surprisingly, there is a great reason for it: Scientific papers are formulaic, and the objectives or research questions are always laid out in the last paragraph of the introduction. Therefore, I read this first to see if the topic of the paper relates to what I need. If the research questions don't match what I'm looking for, I want to know that right away—this has just become a paper that I may not want to spend time reading.

Task: Note their research questions.

Step 2. Read the abstract.
This is tempting to do first, and I often do jump in here if I already know it's a paper I'll need to read.

Task: Summarize their most important findings in a couple of sentences.

Step 3. Read each paragraph of the introduction.
The introduction provides background on the topic and should explain why the research questions are important. I like to read and think about this information before going on, especially if the topic is relatively new to me. Also, at this point in the paper, I want to make sure that I am familiar with the vocabulary they are using. Otherwise I'll waste my time skimming over key terms and missing the main points.

Tasks: 1) Summarize the main idea of each introductory paragraph. 2) List any unfamiliar terms or concepts that seem crucial to understanding the paper. Then look them up.

Step 4. Look at each table and figure. Read the captions.
Tables and figures tell the story of the paper. Any new information the authors are presenting should be displayed in these visual materials. We can take advantage of that.

Task: Summarize what each table and figure shows.

Step 5. Read the Methods section.
Typically I do this a bit quickly the first time, anxious to get to the results, and even more thrilling, the discussion. But that's probably bad form. The methods are important because they let us evaluate whether the results are legitimate or not.

Task: Note the study design and how they address each objective.

Step 6. Read the results section. Refer to each figure and table as it is referenced.

Task: For each research question, note which tables or figures provide information that answers the question. Summarize the answer to each question.

Step 7. Read the discussion.
Discussion sections give the authors the opportunity to speak freely and describe what they think their most important finding is. This is typically stated toward the beginning of the discussion.

Task: Note what the authors describe as their most important finding. Note anything else you found particularly interesting.

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