

情報検索プロセスへの関わり

—大学生向けの理論的観点と実践的観点—

Engaging with the Information Search Process: Theory and Practice for Students

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情報検索, 言葉知識, 剽窃, 引用方法

information search, word knowledge, plagiarism, referencing

ABSTRACT

大学生が高等教育レベルを学ぶ時、基礎的な要件となるのは論文の書き方である。しかし、常に問題とされるのは、彼らが中等教育で論文の書き方を既に学んでいることを求められている点である。ただし、そのような知識を要して論文を書いている学生は稀である。同時に筆記試験が基本という教育制度において論文を書くための知識を中等教育の時から高めるたとしても得られる価値は少ないのである。本稿はKuhlthauのInformation Search Process（情報検索プロセス）を使い論文作成の最初のステージに焦点をあてる。研究を理解する上で重要なWord Knowledge（言葉知識）について主にスポットライトをあてる。ICTの発展により、データベースにアクセスしやすくなったことで、文献レビューの機会が多くなり研究の幅が広がった。しかし、それらデータベースを使いこなすためには、Word Knowledge（言葉知識）が必須であるが、その概念を理解し咀嚼することは難しい。本稿は、理論的観点と実践的観点の二つのアプローチを取る。

A fundamental requirement when one enters the tertiary education level is to know how to write academic papers. The main problem that arises from this aspect is that students are often supposed to know how to write such papers from their secondary level studies (McGregor, 1999). My experience as a Teaching Assistant (TA) at my home university in Japan has shown me it was often not the case. At the same time, in a system dominated by entrance exams which focus on cramming abilities and short answers, it is of little surprise that students might not have the right tools to deal with tertiary education requirements when they

start their life as college students. This article focuses on the first stages of writing papers using Kuhlthau's Information Search Process (Kuhlthau, 2004) and emphasizing the importance of word knowledge when apprehending research. With the development of Internet and Communication Technologies (ICT), database research has become one of the easiest ways to access thousands of academic papers for literature review. However, their optimal use requires word knowledge whose acquisition may not be as simple as it seems. Through drawing on the author's experience as a TA and a Writing Support Desk (WSD) tutor, this paper also provides a concrete measures' section for students who are eager to have pragmatic solutions to their difficulties in finding sources and using them effectively. Considerations on plagiarism and how to avoid it are also provided. This approach on the Information Search Process through both theoretical and pragmatic scopes, will hopefully address researchers' and students' interest on the subject.

1. Issues with information search and referencing

Any research process starts with gathering knowledge about a specific question or theme. This is why most (often scientific), papers start with a literature review with the aim to provide information on the chosen theme which is based on previous works by other researchers. The literature review is, however, the finite version of an ongoing process of finding and reading papers related to the chosen topic. This process, defined as the "Information Search Process", is often not given much attention as it is the most basic element when doing research. Without method however, it can lead to chaotic searches and a significant loss of time. It is therefore important to give it some consideration if one wants to have a head start for writing a paper.

Another aspect of research is mastering the vocabulary used within the researcher's specific fields, also called "word knowledge". Knowledge of a specific field of vocabulary is central to go through the information search process as it considerably enhances the search efficiency. If reading is the unavoidable path to word knowledge, identifying what to read is equally crucial. This is all the more true given the amount of information which is accessible now: one can easily be distracted by fascinating but unrelated readings (which, if not a time loss, often lead to inefficiency).

At some point the gathered sources need to undergo two processes: verification of their reliability and proper referencing at the end of the paper. One always need to ascertain that the references used are reliable as some papers may lack in scientific rigor and be written by authors who try to advocate a particular cause, even if it means distorting some aspects of reality. Critical thinking is certainly the most useful tool here but learning about existing research tools can again increase one's efficiency. Regarding referencing, the process requires following several established rules and failing to do so often results in plagiarism, even unintentional. Needless to say that for one's academic survival, it must be avoided at all cost.

This paper is intended to help address the aforementioned issues, treating them with both theoretical and pragmatic approaches. I hope through this essay, researchers and students will find useful elements on how to conduct efficient information searches, to process and reference.

2. Theoretical Considerations:

1) The Information Search Process.

The Information Search Process Model, developed by Kuhlthau (2004) provides a useful way of theorizing the various steps of the references' identification and retrieval (see Figure 1).

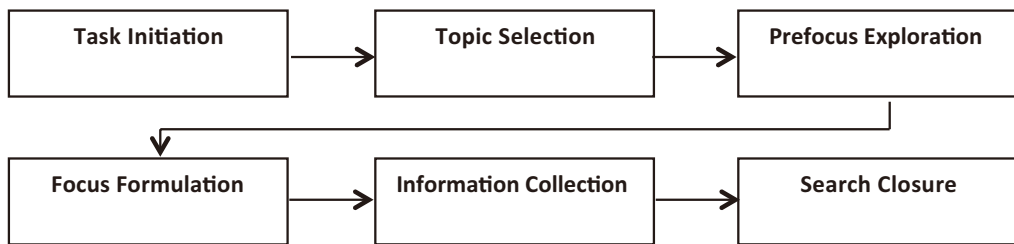


Figure 1. Simplified version of Kuhlthau's initial model for Information Search Process (Kuhlthau 2004, p.45).

The process starts with the 'Task Initiation' phase, when the individual consciously recognizes that a paper is to be written and that selecting a topic and finding information about it will be necessary. The 'Topic Selection' brings the individual to review the potential topics for the task. 'Prefocus Exploration' is a phase where the individual takes up information search on a broad base. Materials found will provide information to determine a focus point for the next phase ('Focus Formulation'). At some point the writer will go onto the 'Information Collection' phase, with a clearer idea of which kind of information and material he/she is interested in. As enough material will be found, the writer will finish the Information Search Process with the 'Search Closure' phase (Kuhlthau, 2004). McGregor (1999) adds to his review of the Kuhlthau's model that this process is not necessarily a linear one, as coming back to former stages to, for instance, refine the focus of the topic or look for more references may be necessary at some points.

Reviewing various models of information searches and processes (including Kuhlthau's model), Harada (2001) concluded the skills in processing information were generally:

- 1) Accessing Information efficiently
- 2) Evaluating information critically
- 3) Using information accurately and creatively

When apprehending research, it is safe to say that those are the basics and need to be mastered as quickly as possible. However, as with many other things, time and practice help refine such skills.

2) Word Knowledge

In order to be able to search and process information efficiently, one will have to read and, of course, understand what one reads. This is where various skills linked to vocabulary mastery – often conceptualized as “word knowledge” – are important to develop. As Yopp and Yopp (2007) mention, word knowledge is linked with comprehension. Horiba (2012) also posits that vocabulary learning and reading are interdependent. Furthermore, as Fazly, Stevenson and North (2007) indicate in the cases of verbs, polysemous verbs (e.g. *give, take, get*, etc.) can be extremely confusing because of the number of their occurrences in multiword predicates, which is something specialized vocabulary can avoid. Indeed the amount of potential meanings and interpretations in specialized vocabulary is dramatically lower as it is used to describe a restricted number of phenomena within a particular field. Therefore, in order to improve one's knowledge in this specific field, learning its relevant vocabulary will be necessary. In turn, expanding one's vocabulary will lead to more sources and new potential perspectives for research.

Agdam and Sadeghi (2014), on the definition of word knowledge, noticed that the breadth and depth of word knowledge were its two recurring characteristics. Breadth refers to the extent of someone's vocabulary: whether a person knows a word or not. Depth of word knowledge, meanwhile, refers to the extent of knowledge a person has regarding words: Snow and

Locke (2001) define it as 1) morphological structure, 2) phonological representation and 3) orthographic representation (Agdam & Sadeghi, 2014). Both breadth and depth of word knowledge need to be developed together if one wants to be able to successfully progress in one's research writing within a given field.

If dictionaries searches generally address the depth aspect and extensive reading the breadth one, Yopp (2007) mentions however that it is central for word knowledge learning to also include contextual information. Again, reading enhances the understanding of keywords within their specific context and facilitates their reuse. In the end these keywords will become familiar enough to be part of one's vocabulary and used in papers or presentations (Agdam & Sadeghi, 2014; Laufer, Elder, Hill and Congdon, 2004).

3. Practical Advice

1) Practical application: initiating research through keywords

Horiba (2012) very straightforwardly points out that in order to expand one's word knowledge, reading is unavoidable, and the information reviewed in the former section definitely corroborate this assertion. It is now important to review how to acquire such knowledge smoothly.

Web search engines are interesting as they draw upon all the websites they can find, without specific criteria apart from those used in their primary design. However, effectively using them can be a difficult task as one will need to classify the information gathered and judge whether this information is reliable or not. To tackle this problem, library databases will help us to avoid to separate the wheat from the chaff. They are part of the services a university's library provide and are accessible through their website. Moreover, given the cost of education nowadays, it would be a waste to leave

aside the main reference finding tool when one has for all intent and purposes paid for it with his or her tuition fees.

Mertens defines databases as belonging to a certain type of source called preliminary sources (Mertens, 2005). They are used to find reliable sources as most of them are centered on academic journals. However, as the literature body can be divided into many fields, disciplines and formats, one will have to examine his or her own information search needs. Following Branch's (2003) research, the first step one can take is to review which database could be useful for one's research with the librarian, mentioning the discipline and language of the sources that are being looked for. An example is that for most of my research within the field of education, social sciences and Japanese studies I use ProQuest (mostly English), ERIC (English) and CiNii (Japanese).

After choosing a database, it will be necessary to select some key search words. This is where word knowledge plays an important role as it considerably reduces the chances of finding something irrelevant to one's research. Class notes, printouts and materials provided for the course (including course slides, if any) should prove to be a good start for finding keywords.

The database will likely provide a large number of papers where the input keyword appears. This is where things will start to get a bit complicated as databases can provide various formats of texts where the keyword appears (full scientific journal articles are the best types of sources one can hope for). As Figure 2 illustrates, while reading through the texts found, some other texts mentioned by the author may be of interest, as well as new keywords. From the first keyword entered (Keyword A), one will find several texts (Text A and Text B). While reading these texts, more keywords or other references mentioned in the text might be of interest. Afterwards, it is a matter of simply

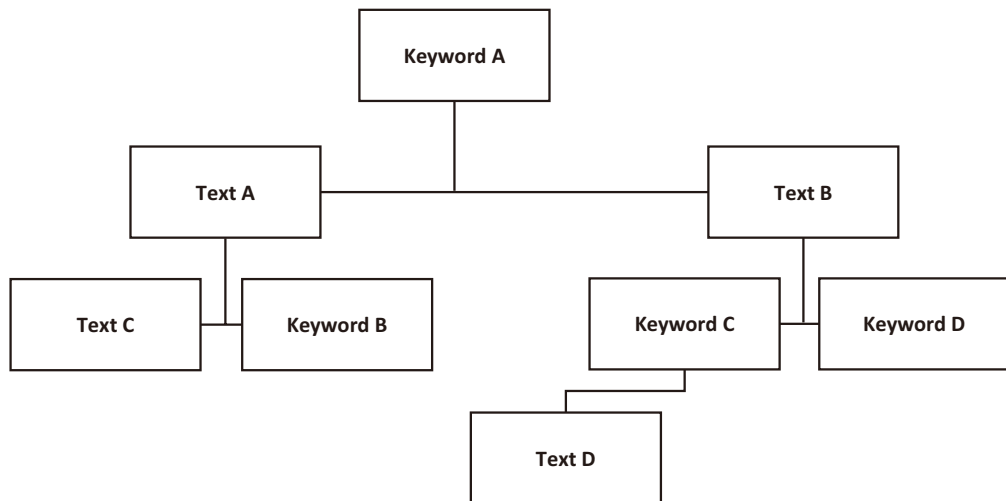


Figure 2. Database research process.

expanding the research with the new keywords and texts while selecting the most relevant information.

In addition, reading through a paper's bibliography can be a very good way of finding new potential sources (Text C in Figure 2 is an example of this process). Whenever the author mentioned someone else's work, if his or her point was valuable for the topic at hand, writing down the bibliographical references and looking for them is the logical thing to do. This can open more opportunities to find new references which could deepen one's understanding of the subject, as well as grounding certain points of the paper into more useful, appropriate literature. References can sometimes lead to books and the process of looking for them in the library in itself can be very valuable as libraries are usually organized around themes. This means that while going to the library to get the book (and sometimes realizing someone has already borrowed it). it is worth checking the other books on the same theme. I have made countless findings by going through this process, which was something I was not necessarily expecting at the start and which the database never gave me. Browsing digital excerpts on online bookstores can also be another option to find more literature.

2) Sources content's reliability

A positive aspect in using library databases (and this can be extended to most books in the library as well) is that one does not have to excessively bother about the reliability of the information contained in the text. However, if the legitimacy of this article is not in the need of scrutiny, this does not mean that the content of it is a universal truth or that it will serve the purpose of the paper to be written. Depending on the researcher's theoretical affiliation and his or her motivation in writing the article, some content have to be taken with caution (Kara-Setoriou, 2007). Critically approaching references which are found is essential as one will need to use them intelligently to write a paper. A quick search about the author can be an efficient way to help situate the paper and to know how reliable it can be. However, looking for papers that do not follow one's ideas can help understanding the limits of one's own viewpoint. Mentioning these opposing arguments in a discussion section of one's paper will show understanding that one's argument is not shared by all concerned. Some assignments specifically ask to show one's understanding of both sides of a debate, requiring proponents' and opponents' main arguments to write a good paper.

Lastly, ascertaining that references found are up-

to-date with the topic of the paper is important. Formerly published literature tends to address questions that were often timely. As years have passed, more people have built on the advances brought by this research. Therefore, more recent works encompass the most recent developments on a specific topic. Hence, exploring these works usually provide more impact to one's research as their potential is yet to be discovered.

3) Referencing

Boot and Beile (2005) emphasizes the generativity aspect in research: the capacity to build new, interesting research based on what was published before. The literature review is definitely a central feature of papers and a well-documented, critical and well-written literature review is a tremendous asset in research. This includes, among others, precise referencing of all the materials used, following strict rules. Whichever the material, as long as one uses it to further his or her own research and writes about it, it must appear in the references' section with all the information and presentation rules that the chosen bibliographical style requires.

Indeed, it is unacceptable to use the content of someone's article without giving that publication and author proper credit. Not doing so results in plagiarism and this can result in disciplinary action from the university, depending on its policy on this matter (Maurer, Kappe & Zaka, 2006). Research on plagiarism has documented that it can be intentional or unintentional, and motivated by more or less unethical approaches to research (Perry, 2010; Singh & Bennington, 2012; Snyder Gibson & Chester-Fangman, 2010). Plagiarizing is similar to stealing, except that rather than stealing material goods, it is about stealing ideas, research, which belongs to someone else. In a survey conducted in Texas Tech University, 74.2% of students admitted to having engaged in behaviors that violates

academic integrity and among these behaviors observed by faculty members, 68.3% were plagiarism (DuPree & Sattler, 2010).

Instructors are not expecting (undergraduate) students to be the millennium genius; their only concern is to check whether their students can write a meaningful paper that respects the rules of academic writing. Quoting people's work is the basis of any research and is not the least shameful. On the contrary, this practice gives them credit for their work by citing them, and shows one's instructor that one knows about the literature relevant to the subject and could even save oneself from getting into a lot of trouble. All in all, referencing is an ethical matter and, when doing research, students are expected to behave critically and ethically (Lambie, Hayes, Griffith, Limberg & Mullen, 2014).

Understanding the ethical importance that governs the use of references and sources is the first step of the whole referencing process. Proper referencing is the second part of it, as many rules need to be followed while giving references of the materials used for the paper. This is an important distinction to make as the line between (un-)ethical approaches and lack of academic writing skills defines that between intentional and unintentional plagiarism. Therefore rigor is crucial when writing a bibliography, citing sources and referencing the papers used: even though there are various bibliographical styles, mixing styles is not allowed and one must follow the rules of the style one has chosen for referencing (see the Epilogue for help on that matter).

Conclusion

This paper attempted to raise readers' awareness of the information search process and the importance of word knowledge when apprehending it. Proper research at the tertiary level cannot be done without word knowledge, in terms of both breadth and

As a TA, reading students' first draft of their papers for the final report has been a task I have been assigned to in some classes. The goal of this process was, of course, to provide students with feedback on their paper organization, sources and references cited and accuracy of the topic given the assignment guidelines. Some papers always impress me, mostly because I feel that if I had been able to do that at their age, I would probably be a better person overall. Others, on the contrary, made a negative impression: after twisting my eyeballs trying to know whether or not a portion of their text was of a different font color I copy/pasted it into google and was sent right into the introduction of the Wikipedia article. Word for word. Having no part in the grading process and being a first screen of their draft before the final paper, their head and anonymity were safe. However, if anything, one does not want to become known for such things...

Figure 3. *TA's personal experience.*

depth. Reading is unavoidable as one proceeds. However, it is difficult to know what to read and how to do so strategically. Therefore, this article also provided pragmatic solutions to enhance students' information search process, giving a particular focus on how to find sources and how to properly reference them. One of the main objectives of this paper was to address an aspect of a university students' daily routine that is too often taken for granted.

Epilogue

The following links are from several websites of university library. They explain the codes and rules to be followed when writing a bibliography and quoting references and sources in detail. Based on which bibliographical style one will be using, these pages can serve as references whenever one has a doubt about how to properly reference and quote sources. As a concluding remark, a teacher I have been working with as a TA recently reinforced his grading policy: no bibliography or sources referenced drop the grade to D, no matter the quality of the paper. My advice to students is then to always take the time to write a bibliography properly: it will give you some training in being rigorous, will prove to the corrector your mastery of the academic codes and get you a good grade.

About American Psychological Association style:

– Purdue University' Online Writing Lab

<https://owl.english.purdue.edu/owl/resource/560/01/>

– Cornell University' Library web site

<https://www.library.cornell.edu/research/citation/apa>

– Concordia University' Libraries web site

<https://library.concordia.ca/help/howto/apa.php>

About Modern Language Association Style:

– Purdue University' Online Writing Lab

<https://owl.english.purdue.edu/owl/resource/747/01/>

– Cornell University' Library web site

<https://www.library.cornell.edu/research/citation/mla>

– Concordia University' Libraries web site

<http://library.concordia.ca/help/howto/mla.php>

About Chicago Manual Style:

– Purdue University' Online Writing Lab

<https://owl.english.purdue.edu/owl/resource/717/1/>

– Cornell University' Library web site

http://www.chicagomanualofstyle.org/tools_citationguide.html

– Concordia University' Libraries web site

<http://libguides.wvu.edu/content.php?pid=123723&sid=1063051>

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