Tips on Writing a Research Paper

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Introduction

Writing a research paper can be an intimidating task especially if one’s experience doing such is limited; but, like riding a bicycle, practice makes the process easier. Many guidelines for the endeavor are available and a comprehensive guide can easily span hundreds of pages; however, over time students in CIS courses have repeated the same specific mistakes on their papers. The purpose of these few pages is to identify these common shortcomings and suggest ways to avoid them, thereby equipping the reader with greater confidence when approaching the project.

Delaying the Inevitable

Writing a research paper is a project. If you have studied project management, you know that successful completion of a project requires much forethought, planning and attention to detail. Those characteristics certainly apply to composing a paper. A key to success is to start early and establish a plan. Intimidation may prompt one to postpone the effort, but the paper must be written and to delay will only make the process even more intimidating. Waiting until the night before the due date makes success virtually impossible and can prompt one to make poor decisions. Begin early, establish milestones, execute your plan and monitor your progress.

All Sources Are Not the Same

Obviously, writing a research paper requires you to conduct research, i.e., identifying recognized and acceptable sources of information containing concepts or facts relevant to the topic. Academic journals and proceedings from conference presentations are generally strong sources as the content has been reviewed by other individuals with knowledge of the field. Books and monographs can be helpful, but these sources are usually examined by external reviewers to a lesser degree. Several trade publications such as ComputerWorld are now web-based, but their content, while reviewed by editors, is not critiqued with the same rigor of academic papers. Judicious use of trade publications is advised and should be based upon expectations of the assignment. Web resources such as Wikipedia cannot be considered a strong source since anyone has the liberty to comment on content no matter their expertise.

Even worse are web pages simply identified with a search engine. The degree of truth attributed to statements on a web site or a blog is entirely dependent upon face validity, i.e., the reputation of the writer. While one might listen to Bill Gates’ opinion about future paths of technology, statements by an unknown software developer at an
unknown firm should receive relatively little weight since the reader cannot assess an established track-record.

But, all content on the web is not inappropriate. Sometimes copies of journal papers or proceedings are available over the web. Some reviewed content is only available from e-journals. When considering the strength of a source, the writer must consider the origin of the content and the degree to which others have reviewed it, no matter the content delivery mechanism. Whether one downloads a copy of a journal article or duplicates it from a bound journal found on the library’s shelf, the origin is the same.

Identifying potential sources is made much easier with use of article database search engines housed in the James C. Kirkpatrick Library at UCM. The following resources are available to students on and off-campus via the Library’s web site:

- Academic Search Complete
- ACM Digital Library
- Computing
- Safari Tech Books

Other helpful searches maybe conducted through the IEEE Xplore Digital Library and AISel, the AIS Electronic Library, both available on the web.

These databases emphasize different types of sources, generating lists of articles meeting the search criteria with abstracts, so search results will vary. One should use more than one database to gain access to an expanded number of articles.

In some cases, the full text of the article can be downloaded from the database while only abstracts and reference information may be available for other sources. In the latter case, the researcher may find the desired article in the library’s holdings. If not, the source may be obtained through the interlibrary loan system called Illiad. Retrieving a book or article from another library can take time so research should be conducted early. If searching for sources presents challenges, librarians are available to aid your effort. See the JCK Library web page for access and availability.

Wandering in the Woods

Reading a poorly structured paper is similar to being lost in the woods. Without an identified goal, most people will wander in circles, never finding a way out; however, a well-structured paper makes the path obvious and leads the reader along, building the next point upon the last toward an identified end.

The paper should be divided into three major sections following the old adage attributed to Aristotle, “Tell them what you are going to tell them. Tell them. Tell them what you told them.” The introduction should be relatively concise and describe the concepts
and ideas the reader should expect. It should include an obvious thesis statement so that the reader knows your position simply by reading the introduction.

But, should the reader accept your view? A foundation and argument which justify the thesis should be carefully developed in the body of the paper. This section should be the longest of the three, consisting of multiple sections and many paragraphs. Craft the body to methodically build a strong case for your thesis.

The paper should conclude with the conclusion. Like the introduction, the conclusion should be concise, referencing the thesis and providing a summary of the arguments presented in the body.

What Did You Just Say?

Proper use of the English language is a reflection of effort and intelligence. A reader’s expectations are quickly deflated upon finding severe grammatical problems in the first paragraph, and frequent errors will motivate the reader to consider alternative uses of time. Instances of misspelled words, poor choice of words, mismatched subject-verb agreement and comma splices, i.e., connecting sentences with a comma, often appear in submissions. Their occurrence is frustrating in that several resources are available to rectify these problems. Word processors, including Microsoft Word, have embedded spelling and grammar checkers. Lack of use is inexcusable and reflects a lazy approach to the paper, thereby diminishing the appeal of the paper as a whole.

Yet, these embedded tools do not conduct a comprehensive assessment of grammatical errors. For instance, poor word choice and transitions between paragraphs are not identified nor corrected. The trained staff at the Writing Center can examine your paper and make suggestions for improvement. Greater feedback can be obtained in-person, but help is also available on-line.

[On a personal note, I found convincing a beautiful, young English major to become my wife has improved my writing!]

Formatting instructions will usually be provided with the paper assignment. One only needs to follow these requirements. Allow time for learning how to address formatting requirements through your word processor’s interface.

Avoid Plagiarism, “The Beast”

Students often struggle to understand plagiarism and violation of expected standards can prompt substantial consequences; however, by following specific guidelines one can avoid difficulties. Plagiarism is a form of intellectual property theft, that is, it is claiming, whether intentional or not, someone else’s words or ideas as your own. When content from an external source is incorporated into your paper, it must properly be cited and referenced. There are no exceptions. Unless so noted, content is assumed to originate from you. You are the default
source of all concepts, ideas and wording; thus, placement of proper citations with matching references is essential to avoid the implication that another author’s work is yours.

The reference list appears after the conclusion and describes the source of the content and how it can be obtained. One reference is required for each source. Citations appear within the paper in conjunction with use of the external source. Use of another’s words should be indicated with quote marks or as a block quote while ideas can be stated in your own words, but in either case, you must cite your source.

Organization is key to avoiding plagiarism. With a plethora of thoughts from external sources, one can easily forget the source of a particular concept or even whether the idea can be associated with an external source. When reading an article found through your database searches, be sure to highlight material you might wish to use. An alternative for material in electronic form is to copy the important content and place it in a word processing document along with the reference. Likewise, index cards can be used to capture ideas from printed material. These blocks of content are easy to reorder as you consider alternatives to structuring the body of your paper; but, it is always important to keep the reference with the material, making citations painless.

However, proper application of a style guide does not ensure avoiding plagiarism. Lack of original thought suggests the paper is but a collection of other people’s ideas. Your task is not only to use external sources, but to extend expressed thoughts through comparison and analysis. Reference external sources as you build your case. Do not rely upon external sources to make the argument for you.

It is tempting, especially when time is limited, to simply copy material from web sites, incorporating content from one source after another. Even if properly cited, there is little or no original thought. As stated by Turabian (2013, 64), “They [instructors] especially dislike reports that read like a collage of web pages. Do that and you’ll seem not only an amateur but worse, possibly a plagiarist.” This is true even if you reword or paraphrase the content. Begin work on your paper as soon as possible to allow time to develop your own ideas and to reduce the temptation to rely heavily upon external sources.

Be sure to observe the formatting requirements for citations and the reference list. Styles such as APA and MLA do vary. For this course, you are to follow the Turabian author-date style. There is a bibliographic-note style, but refrain from using it. Examples for different types of sources, e.g., journal articles and books, are provided in A Manual for Writers of Research Papers, Theses, and Dissertations. Refer to the latest available edition for current formatting standards.

Concluding Thoughts

Reading a well-considered, well-structured paper is enjoyable and writing such provides a strong sense of accomplishment. The endeavor can be successfully negotiated by beginning the writing project early, creating and following a plan, making use of the many tools and aids available, identifying your thesis and building your case, and adhering to the appropriate style guide. If you are struggling with how to approach the task, contact the Writing Center and refer
to the excellent information in *A Manual for Writers of Research Papers, Theses, and Dissertations* by Kate L. Turabian. Above all, think for yourself and avoid heavy reliance upon, or improper use of, external sources. Students are fully capable of completing a research paper, but it will require effort and attention to detail.

Go write a great paper!
Reference List


Useful Links

AIS Electronic Library (AISeL)

http://aisel.aisnet.org/

IEEE Xplore Digital Library

http://ieeexplore.ieee.org/Xplore/guesthome.jsp

UCM’s James C. Kirkpatrick Library

https://library.ucmo.edu/

UCM’s Writing Center

https://www.ucmo.edu/ae/writing/