

The Frustrations of Learning How to Write a Scientific Paper

Abstract

Undergraduate students typically learn to write an English research paper by the ninth grade. However, most undergraduate students are not exposed to writing scientifically until at least their junior year. An English research paper and a scientific paper are two different things. A research paper written for an English class can contain “folksy” words and can be long and elaborate. On the other hand a scientific paper demands the author be succinct, create densely packed paragraphs with facts, all of which must be properly cited. Essentially, a scientific paper is tedious to read, but filled with only the important facts and details. Learning to write such a style of paper can be exceptionally frustrating, especially considering the lack of formal education available to undergraduate students. There is a need to incorporate learning to write scientifically in early undergraduate writing courses as it would benefit the scientific community as a whole.

Introduction

A recent endeavor [1] and writing my first major scientific paper proved both educational and exceptionally frustrating [2]. The major frustration of writing this paper didn't stem from a dislike of the topic, a lack of available information, or the time to work on the paper. The major frustration came from learning how to write the paper scientifically. As an undergraduate student, I have taken several English courses during the course of my academic career. Needless to say I have been taught how to write opinion articles, English research papers, narratives, short stories, poetry, but none of my courses have remotely mentioned how to write a scientific paper. Scientific writing is a writing style all its own, not unlike learning to speak a new language, it is designed to convey relevant data in the most efficient and reproducible manner possible. It demands that the author's thoughts be composed into well written, data filled paragraphs that are arranged in a set order and with strict formatting guidelines. Scientific writing contains only the most important information and conveys this information in a straight forward, data rich method. Unnecessary adjectives and adverbs are to be excluded as well as “folksy” words. Most writing styles taught in an English class encourage long elaborate paragraphs filled with an abundance of unnecessary adjectives and adverbs, essentially words that enrich the opinion, message, or story being conveyed. To make matters worse, scientific writing is not only a totally different writing style, but it is also accompanied by strict formatting rules as well. There are no fancy fonts or headings, large unneeded spaces or figures placed in text. In addition, each academic journal has set guidelines for how to format a scientific document, so when writing a scientific document one must also take into account the formatting required by the publisher. Taking all of this on at once and being tasked to write one's first major scientific paper can be daunting and overwhelmingly frustrating [1,2].

Abounding Frustrations

Beginning the endeavor of writing my first major scientific paper, I had little knowledge of how to write scientifically and no proper instruction or course to learn from. I also was not familiar with how the journal expected the format of the paper. To make matters worse the scientific paper was to be written by a team of writers, of which almost none had any experience writing scientifically. This led to many hours of indecisive time wasting and uncertainty. The initial few drafts of the paper were rough and not even remotely written scientifically to say the least. As the paper began to come together and a draft was sent to faculty co-authors for review and input, it became quite evident that the paper needed grammatical and scientific revision. Attempting to re-write the paper scientifically yielded frustrating results as the writing team still had almost no idea how to write scientifically. Many hours were spent reading over the paper, revising sentences and cutting out unnecessary words. The frustration of learning to write scientifically also made it difficult to find motivation to work on the article and was sometimes deterrence, as it was always a struggle to get the information composed in the proper manner. This only adds to the frustration because the paper needed to be written, but was difficult to correctly compose.

The final draft of the article sent to a faculty co-author still yielded frustrating results pinpointing the lack of understanding about writing scientifically. It can be very discouraging for an undergraduate student when an article that consumed many hours of valuable time fails to bring satisfactory results of a quality article worthy of recognition as a good entrance to scientific writing. In time scientific writing will become easier, but for now it remains a frustrating, though exceptionally beneficial, skill to have to learn. With little formal instruction to draw from, learning to write scientifically ultimately comes down to teaching oneself.

Proper Instruction

Typical undergraduate students have taken several English courses prior to admittance into a university and upon entering a university, are commonly required to take an introductory English course as part of a general education requirement. However, for the most part there is limited to no instruction on proper scientific writing in any of these courses. There is an abundance of instruction on how to write poems, personal narratives, English research papers, opinion articles, short stories, but scientific writing seems to be ignored. For students intent on pursuing a scientific career, publications in peer reviewed academic journals are inevitable, and as such the ability to write scientifically is required. Proper instruction and background on scientific writing in English courses would benefit students immensely by giving students a foundation to begin building their scientific writing skills.

Universities typically provide courses on how to write scientific papers, but most are reserved for junior or senior level students. By then it is too late. Exposing undergraduate students to instruction on writing scientifically early on in their academic career could reduce the amount of frustration experienced when writing a scientific paper. This could potentially increase the amount of valuable scientific material that is published and available for the academic community. Additionally, it may help alleviate the frustrations that professor's experience when serving as mentors to undergraduate students undertaking their first scientific publication. This could also help professors be more willing to work with undergraduate students who wish to pursue scientific publications. Scientific writing takes practice to get better at and can be frustrating to learn, but earlier formal exposure to the writing style can help undergraduate students achieve their first scientific publication with fewer frustrating events and potentially career changing discouragements.

Conclusion

Scientific writing is definitely different than any other style of writing. It is centered on conveying information in a logical and efficient manner. As such, the writing style is designed to provide data in a logical, data rich fashion and as succinctly as possible, only including the pertinent information. Learning to effectively write scientifically can be exceptionally frustrating to learn and can be a deterrence when writing one's first scientific paper. There is often little official instruction on writing scientific papers for most undergraduates until their junior or senior years. Earlier exposure to writing scientific papers would be beneficial to the scientific community as it has the potential to increase the amount of publications and knowledge available. The successful completion of one's first scientific paper can be a rewarding experience to the frustrations after learning the important skill of scientific writing.

References Cited

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