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Evaluating the NIH Library Editing Service: Pilot Study Used to Analyze Service Impact

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Abstract

Evidence-based librarianship drives initiatives and priorities in today's research centers. To evaluate the effectiveness of the National Institutes of Health (NIH) Library's Editing Service, librarians conducted a pilot study comparing edited manuscripts with the published versions. Using a random number generator, five published journal articles were chosen for evaluation from a pool of NIH manuscripts (n=147) edited between January 2008 and February 2012. A rubric delineating categories of frequently-checked writing elements was used to facilitate quantitative analysis. Findings showed that 84% of editors' suggestions were accepted for three of the published papers that were submitted to the originally intended journal.

Keywords

editing service; evaluation; librarians; pilot study; writing center

INTRODUCTION

Innovation that is evidence based is the standard at the National Institutes of Health (NIH) Library. In 2008, the Library launched its Writing Center and Editing Service based on the stated needs of researchers when communicating their research findings. "Expanding on traditional library service, its purpose is to support NIH staff with their manuscripts from concept to publication, especially those for whom English is not their primary language" (Clark and Sullivan 2013).

Before implementing the Writing Center and Editing Service, librarians looked at the work being done by staff at the William H. Welch Medical Library as a model (Stephens and Campbell 1995). We considered the differences in audiences (academic students versus government career researchers), the issue of when and how to introduce a fee-based editing service, and staffing constraints.

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For more information about the NIH Library Writing Center and Editing Service, go to: <http://nihlibrary.campusguides.com/WritingCenter>.

While librarians trained in science and technical editing had been editing manuscripts for several years, and had begun offering writing-related training for NIH employees, librarian-editors had not evaluated the editing service beyond feedback received from the standard editing service evaluation form. Data collected via the evaluation form, available in print and electronic formats, specifically measured author satisfaction.

Several years of data collection indicated that authors were satisfied with the level of editing service received. The majority of editing service recipients ranked editors' knowledge of writing/editing, clarity of suggestions, timeliness, and responsiveness to questions as very good or excellent. However, librarians wanted to know if suggestions made by the NIH Library's (NIHL) editors were used in the final NIH-published journal articles. "In order to learn if the editing service had a positive effect on NIH authors' work, librarians conducted research in the form of a pilot study comparing editing suggestions given for a manuscript's improvement with the final published journal article" (Clark and Sullivan 2013).

METHODS

Prior to initiating the editing service pilot study, a literature search was conducted using PubMed, Scopus, Web of Science, LISTA, and Google Scholar to learn how similar services were analyzed. Variation or truncation of terms used for the search strategies, as appropriate, included: algorithm, analyze, assessment, comparative studies, compare, code, editing, editor, evaluate, instrument, measurement, quantitative measurement, revision, rubric, scheme, schematic, standards, statistics, student, tool, tutorial, writer, and writing center.

From our literature search, we found that published articles were concentrated mainly in academia and mostly involved discussions of editing service provided to students through university writing centers. An article by Witte, et al. (1983) led us to consider the level of complexity we wanted to pursue with our survey instrument and analysis. While we could have used a similar approach and included evaluating edited authors' perceptions of our work, or included more items for analysis in our survey instrument, we decided to take a more simple approach for our pilot study.

An article by Ludbrook (2007) covered how teachers or editors work, or could work, with students to become better writers. This article alerted us to common challenges with writing and editing and, minimally, to check if we were measuring for these in our survey instrument. Williams (2004) explored student editors working with student authors for whom English is a second language (ESL or L2). Although our customers differ, from this article we gained an understanding of potential research methodology and analysis, and also insight into what we might expect from our research results. The rubric discussed in an article by Knight (2005) was used to assess students' writing associated with creating bibliographies. The take-aways from this paper, for us, were to develop a reliable instrument, to train in the use of the instrument to ensure consistent interpretation of the results, and to implement a process for evaluation. These articles informed our thinking about aspects to explore through our research and also about future library-provided training opportunities; however, they did not fully address the needs of our editing service evaluation project.

We did find the brief article written by Daggett (2008) to be helpful. Daggett wrote about the use of a simple rubric to evaluate nursing students' writing. We used the basic structure and some of the elements within Daggett's rubric as a model for our specific rubric (Figure 1) created to analyze editing suggestions for NIH manuscripts that were later published.

The next part of our research process involved collating and enumerating the citations, with associated NIHL editors' names, for all NIH manuscripts edited between January 2008 and February 2012. These citations were organized into a Microsoft Word document to create a pool for selection (n=147). The pilot study was limited to analysis of five manuscripts/ published journal articles because we did not know how time-intensive the analysis would be.

To avoid research bias, we used a publicly-available random number generator (Random.org, Randomness and Integrity Services Limited, Dublin, Ireland) to select the five edited/published papers based on the random number sequence and matched to our collated list of manuscripts. Due to predetermined selection criteria, we rotated through 36 numbers before 5 manuscripts were chosen. Selection criteria were:

- The manuscript had to be published as a journal article.
- The manuscript had to be edited by an NIHL editor still employed at NIH.
- The editor had a copy of the edited manuscript on file.
- The published journal article indicated NIH as one of its authors' addresses.

Before initiating our analysis, we created the evaluation rubric (Figure 1), with 11 categories detailing specific editing elements, to facilitate quantification. Categories used for this analysis were: journal organizational style adherence, spelling and word choice, capitalization, grammar, punctuation, clarity, treatment of numbers and International System of Units (SI) abbreviations, figures and tables, in-text citations, references, and change of chosen journal. The analysis process was discussed beforehand to minimize consultation time. Each chosen paper was analyzed separately by the two researchers and then the researchers reviewed all analyzed papers again for categorization agreement.

Quantification

For the purposes of this research project, we counted each instance of an editing suggestion as one count. While it may appear from the number of suggestions made that the manuscripts required a lot of work to become publication ready, that was not the case. Most manuscripts that NIH librarian editors review benefit from added punctuation to improve readability, a correction of noun/verb agreement, or formatting to meet journal guidelines. An author may have a few writing challenges that are evident throughout their manuscript. Once these are identified, and the editor provides the author with references to punctuation or grammar rules, the author becomes aware of how to improve current and future manuscripts.

Criteria for Analysis

Each of the five edited manuscripts evaluated for the pilot study was assigned a number to distance the editor from the manuscript being analyzed, and to avoid identification of the author of the manuscript. This blinding technique was not complete given that the two researchers were themselves editors of some of the manuscripts. Using the rubric created specifically for the pilot study, a separate sheet was made for each page of the edited manuscript to allow for collation of the findings. During analysis, each instance of an editing suggestion was searched for in the corresponding published journal article. The researcher then noted whether a suggested edit was used or not used in the published article or whether the original sentence or paragraph containing the suggestion had a subsequent major revision. When the comparison was completed for a manuscript, the counts were tallied and the percentages calculated. In general, the following aspects of the manuscripts were evaluated for this research project:

- Spelling errors (American or British English used consistently, consistent word treatment, etc.)
- Term treatment (consistency in hyphenation, capitalization, sub- or super-scripts, etc.)
- Grammar errors (errors that should not appear in a published paper)
- Format and sequencing issues (consistency in alignment, lists, etc.)
- Unclear sentences/phrases/paragraphs (for suggested revision)
- Adherence to the journal's "Instructions for Authors" guidelines (title, abstract, section headings, article length, etc.)

RESULTS

Two of the five analyzed manuscripts were ultimately published in a different journal than was edited for or underwent significant revision after the authors received feedback through the editing service. Therefore, these manuscripts were removed from the final analysis. Analysis of the three remaining journal articles showed that 243 of 289 editors' suggestions (84%; Table 1) were accepted by NIH authors—the editor's suggestions were incorporated into the published journal articles. (Note that if papers are averaged, the number drops to 82%.) In addition, librarian editors were acknowledged for their editing assistance in two of the five published articles. These results were originally presented as a poster at the 2013 SLA Annual Meeting All Sciences Poster Session.

CONCLUSIONS

The finding from this pilot study—that 84% of editors' suggestions were used in the final published version of the manuscripts reviewed—does indicate that the NIH Library is having an impact on science. While additional studies will need to be done to further evaluate that impact, it is confirming that the work of the librarian editors has value. We can say with certainty that the work done through the NIH Library Editing Service contributed

to more readable manuscripts and, therefore, enhanced the probability that NIH authors using our service would be published.

We learned from our customers that many authors have similar challenges when it comes to grammar, punctuation, and editing. The analysis work done for the pilot study led us to develop additional educational tip sheets and classes that address many of these challenges. It also led to improvements in our internal Editing Service best practices.

In 2014, the work done by NIH Library editors changed from strategic to operational as it is now part of the librarians' normal workflow. A team of "core editors" receive editing service requests from rotation-based assignments, from inquiries while on reference desk duty, and from repeat customers.

At this time, we have not implemented a fee for service. Reasons for this include: 1) Editing is only one aspect of a librarian's duties. To offer competitive pricing for our service, librarians would idealistically provide more in-depth or substantive editing and a faster turn-around time. 2) The NIHL's core editors are generalists; vetting of the science is left to an author's lab chief, supervisor, or director. 3) Charging back to a government customer introduces a level of administrative work that we are not currently prepared to manage.

The NIH Library's Editing Service has its niche. Our staff have built upon traditional reference librarian work—referring authors to appropriate writing-related resources; assisting with verifying and formatting in-text citations and references; and identifying high-impact journals for potential manuscript submission—to further provide a value-added service that benefits us as well as our customers. In the process, our librarians have gained a better understanding of the research being done at NIH, the needs of its authors and where they are publishing, and, at the same time, have themselves become better writers and editors.

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NIH Library Editing Service Research Assessment Rubric					
Researcher:		Research Paper Analyzed: #__ pg 1			
Criteria		Number of Suggested Edits	Number of Suggested Edits Used in Published Paper	Number of Suggested Edits Not Used	Number of Suggested Edits/Section of Text Not Used
Journal Organizational Style Adherence (js)	Organization of material such as Running Head, title, author names and addresses, and abstract (including word limit); Introduction, Methods, Results, and Discussion (IMRAD); Acknowledgements; Funding; Conflict of Interest statement; overall word limit for type of article follows journal's guidelines/Instructions to Authors; use of italics, font or point size, bolding				
Spelling and Word Choice (sw)	Typographical errors; consistency in spelling/treatment of words including hyphenation; use of the correct word or synonym noted; word placement; spacing				
Capitalization (c)	Uppercase, lowercase				
Grammar (g)	Subject-verb agreement; use of past, present, and future tense; proper use of definite and indefinite articles and prepositions; lack of contractions indicative of professional writing				
Punctuation (p)	Proper use of commas and serial commas (restricted use in British English journals); colons, semi-colons, and dashes; quotation marks (double quotes in American English journals)				
Clarity (cl)	Sentence meaning clear to the educated lay reader				
Treatment of Numbers/ International System of Units (SI)/Symbols (n/u)	Use of numbers according to context; proper units including capitalization or italics as required; correct spacing between number and unit; correct use of symbols				
Figures and Tables (f/t)	Treatment of abbreviations, captions, number of figures and tables adheres to journal's style; consistency in labeling; quality of graphics; copyright permission noted as necessary				
In-text Citations (itc)	Proper in-text citation treatment according to journal's style				
References (ref)	Proper formatting of citation and number of references according to journal's style				
Change of Chosen Journal (CJ)	Author(s) decision to submit to a different journal than the one edited for affected editing suggestion				
Key: ✓ = edit incorporated N = edit not incorporated X = did not use that section of text					

Figure 1.

TABLE 1

Analysis of Editors' Suggestions Incorporated in Published Journal Articles

Published paper	Editor suggestions	Author accepted suggestions	Author did not accept suggestions	Author did not use text with editing suggestion	Percent of suggestions accepted
#23	n=66	n=58	n=8	n=1	88%
#35	n=44	n=32	n=12	n=0	73%
#72	n=179	n=153	n=24	n=3	85%
Total	n=289	n=243			84%