Developing New Levels of Edit

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In 1985, the writing and editing group at Los Alamos National Laboratory established four levels of edit for technical reports. When a survey in 1994 showed that both authors and editors felt the levels were not meeting author needs, we set about revising them. Our goals were to simplify the editing process, focus editing on improving technical clarity, and ensure that value was added in editing. This paper describes our revision process and product—three author-based levels of edit.

Drawing on the levels-of-edit work done by Van Buren and Buehler (1), the writing and editing group at Los Alamos National Laboratory crafted four cumulative levels of edit in the mid 1980s. In general terms, Level I corrected typographical, basic grammar, and sequencing errors, as well as violations of Laboratory policy; Level II expanded corrections to those of a copy edit; Level III added revising sentences to improve readability; and Level IV added revising paragraphs and improving overall report organization. All technical reports received at least a Level I edit.

Providing four levels of edit gave authors a means of specifying how much editing they wanted and gave editors a means of estimating the cost of that editing. With more than seventy editors working on reports by several thousand technical staff members, the levels were also a means of guaranteeing some consistency in the editing services provided. They were especially helpful for the central pool of editors who worked on reports from authors throughout the Laboratory with whom they often had never worked before. The levels provided a framework for indicating what kinds of document errors the editor would address.

In 1994, our Continuous Quality Improvement (CQI) team was asked to review and possibly revise the levels of edit as part of a study into ways to reduce the time it was taking to produce technical reports. Our task turned into a process that lasted two and a half years. As a result, in October 1996 three new levels of edit were implemented at the Laboratory. This paper summarizes the revision process and the new levels of edit.

LEVELS-OF-EDIT SURVEY

Our work began with a questionnaire. We surveyed one hundred authors, as well as our own editors, to learn how well they understood the levels and how well the levels met author needs. We found that "drawing lines" to separate the four levels created problems for authors and editors alike. When questioned about which level of edit they generally chose and why, most authors felt they were requesting the appropriate level, but they had many misconceptions about what editing the level entailed. Although editors understood the levels better, interpretations varied on exactly where the lines between levels were drawn. We also learned that the levels provided editing not always wanted and that authors had three main criteria in choosing a level of edit: their intended audience, the turnaround time for editing, and cost.

These survey results set the agenda for our revisions. Our goals were to (1) simplify the editing process by reducing the number of levels and drawing straighter lines between them, (2) restructure the levels around audience needs with the focus on improving technical clarity in reports, and (3) ensure that editing added value. An important aspect of this third goal was to be sure that the author's and editor's spheres of expertise complemented one another, rather than overlapped, in the editing process.

REVISION PROCESS

We began by evaluating all the editing problems addressed by the old levels of edit in terms of their impact on technical clarity. This led us to develop an editing matrix for document errors (Fig. 1) that grouped errors into four categories:

1. Glaring errors that suggest incompetence or carelessness, such as run-on sentences, subject-verb disagreement, or misoriented figures.

2. Errors that affect technical clarity, such as erroneous punctuation or undefined acronyms.

3. Violations of technical and grammatical conventions, such as the use of nonstandard abbreviations or symbols (technical) or word usage errors (grammatical).

4. Violations of the conventions followed in formal writing, such as faulty parallelism or haphazard acronym usage.

Our matrix showed the importance of audience when considering editing requirements. Although glaring document errors were largely independent of audience, those in the other three categories were audience dependent. This dependence was especially true for technical clarity: whereas only a third of the errors would

Document error	Glaring	Technical audience			Nontechnical audience		
		Affects clarity	Violates tech./gram. conventions	Violates writing formalities	Affects clarity	Violates tech./gram. conventions	Violates writing formalities
Subject/verb disagreement	X						
Misspellings/typos	X				X		
Sentence frag./run-ons/no end punctuation	X						
Sequencing error (figs., tables, refs., etc.)	X				X		
Inconsistent headings/pagination	X						
Poor reproducibility of figures/tables	X	X			X		
Figure/table misalignment/misorientation	X	X			X		
Word choice—wrong word		X			X		
Undefined technical jargon		X			X		
Punctuation		X	X		X	X	
Hyphens (spelling error)			X			X	
Hyphens (*Chicago* rules not followed)			X		X	X	
Pronoun/antecedent disagreement			X		X	X	
Undefined acronyms		X			X		
Acronym usage rules not followed				X	acronym usage is minimized		
Nonstandard tech. abbreviations/symbols		X	X		abbreviations/symbols avoided		
Inconsistent use of abbrevs./symbols			X		abbreviations/symbols avoided		
Inaccessible references		X			X		
Inconsistent reference style			X	X		X	X
Inconsistent number usage			X		X	X	
Misplaced modifiers	X	X		X	X		X
Common word usage errors			X	X		X	X
Paragraphing (length)		X			X		
Paragraphing (coherence)			X	X	X		
Overly complex sentences		X		X	X		X
Incomplete comparisons				X	X		X
Faulty parallelism				X	X		X
Wordiness				X	X		X
Overuse of passive voice				X	X		X
Misspelling—secondary variant				X			X
English vs metric units			X		English units generally preferred		
Poorly designed figures/tables		X	X		X	X	
Inconsistent figure/table format				X	X		X
Organization of report				X	X		

Fig. 1. Editing matrix developed from analyzing document errors in terms of their impact on technical clarity.

affect clarity for a technical audience, almost all would do so for a nontechnical audience.

Based on this analysis, we proposed three cumulative levels of edit for technical audiences (the main audience for Laboratory reports). These levels were designated simply as A, B, and C (Fig. 2). Level A corrected glaring errors that could prove embarrassing to author and Laboratory alike. Level B added corrections for document problems that would affect clarity for a technical audience and/or violated grammatical conventions. Violations of technical conventions were not corrected because they fell within the author's sphere of expertise and were unlikely to affect clarity for a technical audience. Level C corrected inconsistencies in technical usage, addressed violations of the conventions followed in formal writing, and added rewriting to improve clarity. This level was intended to polish technical writing—it was also the minimal edit for documents written for nontechnical audiences.

The next step was to run the new editing scheme by the editors for their critique. On the whole, they felt the levels would be workable but suggested that we expand our list of document errors. For example, in addition to problems involving "pronoun/antecedent disagreement," there was the even more fundamental problem of ambiguous pronouns whose antecedents are unclear. Similarly, misplaced modifier problems could be subdivided into dangling participles that may not only confuse but also elicit a chuckle (and therefore embarrass authors) and other misplaced modifiers that may simply cause confusion. The editors also suggested that we reorganize the matrix to show the cumulative nature of the levels and to group the document errors more logically.

The biggest source of controversy turned out to be how to name the new levels. Although "Full Edit" was the early favorite for Level C, Levels A and B proved more difficult to define. Suggestions included Production Edit and Technical Edit, Minimal Edit and Technical Clarity Edit, and Preliminary Edit and Content Edit—and myriad variations on these possibilities.

Document error	Glaring	Technical audience		
		Affects clarity	Violates tech./gram. conventions	Violates writing formalities
Subject/verb disagreement				
Misspellings/typos				
Sentence frag./run-ons/no end punctuation				
Sequencing error (figs., tables, refs., etc.)				
Inconsistent headings/pagination				
Poor reproducibility of figures/tables				
Figure/table misalignment/misorientation				
Word choice—wrong word				
Undefined technical jargon				
Punctuation				
Hyphens (spelling error)				
Hyphens (*Chicago* rules not followed)				
Pronoun/antecedent disagreement				
Undefined acronyms				
Acronym usage rules not followed				
Nonstandard tech. abbreviations/symbols				
Inconsistent use of abbrevs./symbols				
Inaccessible references				
Inconsistent reference style				
Inconsistent number usage				
Misplaced modifiers				
Common word usage errors				
Paragraphing (length)				
Paragraphing (coherence)				
Overly complex sentences				
Incomplete comparisons				
Faulty parallelism				
Wordiness				
Overuse of passive voice				
Misspelling—secondary variant				
English vs metric units				
Poorly designed figures/tables				
Inconsistent figure/table format				
Organization of report				

Level A Level B Level C

Fig. 2. First definition of three cumulative levels of edit based on our analysis of how document errors affected technical clarity.

NEW LEVELS DEFINED

We then refined the proposed levels by incorporating the editors' suggestions. The result of that refinement, after many iterations, was the editing checklist shown in Fig. 3. We grouped document errors into three categories (report structure/format, graphics, and text), reordered them to show the cumulative nature of the levels, added formatting problems and policy violations, and made a distinction between problems that editors would correct and those they would only query. Queries were intended to cover (1) problems that were in the author's sphere of expertise but that could affect technical clarity, such as erroneous technical abbreviations; (2) problems that the author might choose not to correct, such as nonstandard pagination or figures that will not reproduce well; and (3) problems that the editor might not be able to correct without the author's help, such as undefined technical jargon. Finally, we settled on names for the new levels: Proofreading Edit, Grammar Edit, and Full Edit.

As part of our effort to simplify the levels of edit, we also wanted to simplify their definitions. Our goals were to explain the levels in more author-friendly terms by minimizing the grammar jargon and to define the levels in terms of how a report would be used. Our simplified definitions were as follows:

• The Proofreading Edit is designed for technical documents that are written primarily to meet an administrative requirement (e.g., archival reports) or that have a very limited distribution. This minimal edit may also be the only alternative for a short turnaround time. In addition to proofreading the report, editors will look for violations of copyright law and Laboratory policy and will check for sequencing errors among headings, tables, figures, and references.

• The Grammar Edit is designed for documents whose intended audience is the author's technical peers. Editors will correct problems identified in a Proofreading Edit plus problems that affect textual clarity. These problems

Document Error	Proofreading Edit	Grammar Edit	Full Edit
Report structure/format			
Violations of Lab/DOE policy	X	X	X
Sequencing errors (figures, tables, references, pagination, etc.)	X	X	X
Nonstandard headings or headers/footers	X	X	X
Report parts do not agree: figures/tables with one another or with text; text with text	Q	X	X
Inaccessible references	X	X	X
References not in Lab format			X
Gratuitous font changes		Q	X
Nonstandard pagination, leading, margins, or indents		Q	X
Graphics (figures and tables)			
Misorientation	X	X	X
Poor reproducibility	Q	X	X
Placement		X	X
Poorly designed		Q	X
Inconsistent formatting			X
Text			
Subject/verb disagreement	X	X	X
Misspelling/typos	X	X	X
Misspelling (secondary variants)			X
Sentence fragment/run-ons/no end punctuation	X	X	X
Embarrassing dangling participles	X	X	X
Word choice (wrong word)	Q	X	X
Ambiguous pronouns	Q	X	X
Punctuation		X	X
Hyphens (spelling error)		X	X
Hyphens (*Chicago Manual of Style* rules not followed)			X
Pronoun/antecedent disagreement		X	X
Sexist pronouns		Q	X
Undefined acronyms		X	X
Acronym usage rules not followed			X
Use of English vs metric units			X
Wrong or ambiguous technical abbreviations/symbols		Q	X
Nonstandard or inconsistent use of abbreviations/symbols			X
Nonstandard number usage			X
Inconsistent equation formatting		Q	X
Undefined technical jargon		Q	X
Word usage errors		X	X
Misplaced modifiers		X	X
Overly complex sentences		X	X
Paragraphing (length)		X	X
Paragraphing (coherence)		Q	X
Incomplete comparisons			X
Faulty parallelism			X
Lack of subordination or emphasis			X
Wordiness			X
Overmodified nouns			X
Overuse of passive voice			X
Organization of report			X

Fig. 3. Editing checklist for the new levels of edit (X = correct, Q = query).

include basic grammar and punctuation errors, word usage errors, and overly complex sentence structure.

• The Full Edit is designed to polish technical documents that must meet rigid readability or format requirements (e.g., SOPs, manuals, or progress reports subject to critical review). It is also the recommended edit for any document intended for a broader audience than one of technical peers. A Full Edit goes beyond the Grammar Edit to include rewriting to improve sentence and paragraph structure as well as overall document organization.

We also developed a chart that provided an entirely new way for authors to determine the appropriate level of edit based on their report's audience and scope (Fig. 4). As one moves from left to right across the chart, a wider audience is targeted; as one moves down the chart, reports will have greater visibility. The point of intersection between the two variables defines the recommended level of edit. Both the chart and the editing checklist are available to authors on the Laboratory's internal Web site.

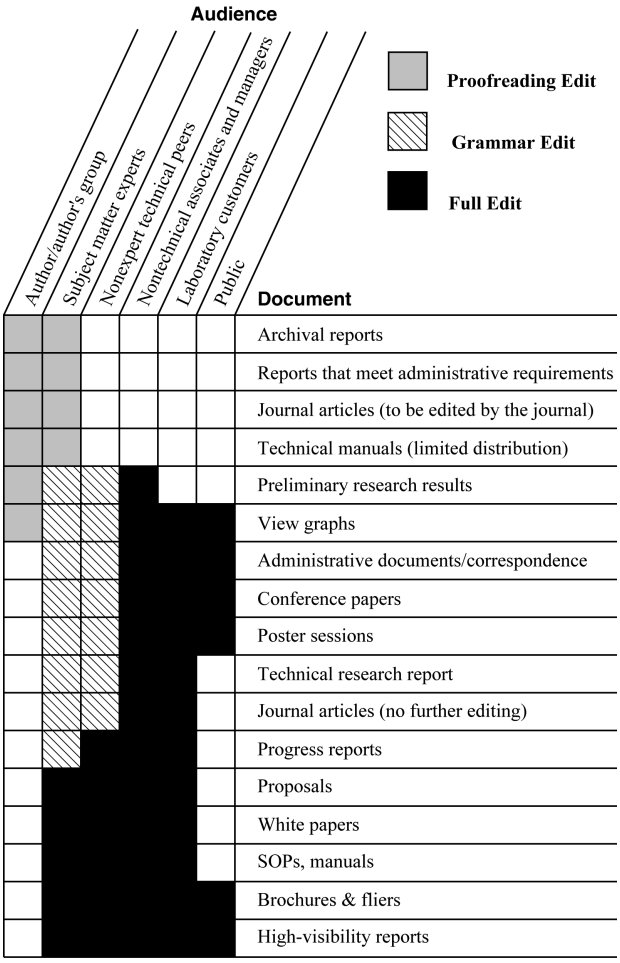

Fig. 4. Levels-of-edit chart.

IMPLEMENTATION

The final step in our revision process was to conduct usability tests for the new levels. These tests focused on the Grammar Edit because it marked the greatest departure from the old levels. Two groups of editors volunteered to edit a short report (eight pages long with two figures and six references). As a training tool, we developed a two-page amplified checklist that spelled out in greater detail the editing requirements at each level. For example, under "Violations of Lab/DOE policy," the amplified checklist specified the publication policies that must be followed. Similarly, under "Misspelling/typos," the amplified list noted that capitalization errors, problems involving the use of roman versus italic type, and extra or missing characters, symbols, and spaces were included in the errors to be corrected. The checklist also explained what standard was being invoked for errors involving nonstandard or inconsistent usage.

After a short training session, editors were given the training document. We compared their edits with our key, marked discrepancies, returned the edits, and then held meetings to discuss where they had trouble following the checklists and how the lists could be clarified. One upshot of these tests was that we eliminated several author queries that the editors felt would be both time-consuming and annoying to authors; most fell within the sphere of author expertise. Another was that we expanded the amplified checklist.

When the tests proved successful, we were ready to implement the new levels. In preparation for this change, we repeated the training and test edit procedure for all editors in our group and held meetings to solicit their feedback. Their responses led to more clarifications of the amplified checklist. As part of this training exercise, we also asked editors to note the time it took them to complete their edits in order to develop estimating guidelines for the new levels. Then in October 1996, we officially switched to the new levels of edit.

NEW LEVELS IN RETROSPECT

Having worked with the new levels for over a year now, we find they are meeting our goals. Editors and authors alike are pleased to have fewer levels to work with. Editors have found the checklist helpful in spelling out the priority of editing corrections and in defining how the lines have been drawn between the levels. They have also found the chart helpful when they talk to authors about how much editing is needed given the nature of a report's audience. The amplified checklist has proved to be an effective tool in training new editors. Finally, authors have found the Web page definitions of the levels (the checklist and chart) helpful aids in choosing a level of edit. At this point, we do not anticipate making any midcourse corrections in our new levels of edit.

REFERENCES

(1) Van Buren, R., and M.F. Buehler, "The Levels of Edit," Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, 1980.

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