

Readability Statistics

How to write with greater power, clarity, and economy

Shane Pekny

NOVEMBER 11, 2016



Choosing the right style

“Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.”

In 1776 our founders established this country on the principles of freedom and equality.

Metric	Lincoln	Rewrite
Words	30	14
Sentences	1	1
Words per sentence	30	14
Characters per word	4.7	5.2
Passive sentences	100%	0%
Flesch Reading Ease	43.8	29.4
Flesch-Kincaid Grade Level	14.5	12.6
Sounds lyrical and historic?	Yes	No

Choosing the right style

“The sun did not shine. It was too wet to play. So we sat in the house all that cold, cold, wet day.”

It was cold and rainy outside so we stayed in the house.

Metric	Dr. Seuss	Rewrite
Words	23	12
Sentences	3	1
Words per sentence	7.6	12
Characters per word	3.1	3.6
Passive sentences	0%	0%
Flesch Reading Ease	100	95.9
Flesch-Kincaid Grade Level	0	2.8
Sounds Seussian?	Yes	No

Choosing the right style

“Our principal investigator is a graduate of the Antonin Scalia School of Law at George Mason University.”

Our PI is an ASSOL grad.

Metric	Spell out full names	Use horrible acronyms
Words	17	6
Sentences	1	1
Words per sentence	17	6
Characters per word	5.1	3.0
Passive sentences	0%	0%
Flesch Reading Ease	20.3	100
Flesch-Kincaid Grade Level	14.6	0.5
Confusing and unintentionally funny?	No	Yes

Choosing the right style

“Presented to either a third year (or later) graduate student or a postdoctoral trainee, the annual award is designed to support mode-of-action research aimed at characterizing dose-dependent effects of xenobiotics on mammalian systems in such a way that the causal sequence of key events underlying toxicity is elucidated.”

The annual award supports research into changes caused by foreign substances on cells in mammals and the key events leading to toxicity. The annual award is open to postdocs and grad students in their third year or later.

Metric	Society of Toxicology RFP	Rewrite
Words	48	38
Sentences	1	2
Words per sentence	48	19
Characters per word	5.6	4.7
Passive sentences	0%	0%
Flesch Reading Ease	0.0	58.4
Flesch-Kincaid Grade Level	26.7	9.8
Broke the Readability formula	Yes	No

About me

Past 12 years of experience:

- Habitat for Humanity
- Goodwill Industries
- University of Nebraska at Omaha
- Boys Town
- Part-time teaching, magazine writing
- Prior experience and training in journalism

Most important lesson:

- Focus on the audience.

My goals:

- Be clear, concise, and compelling.

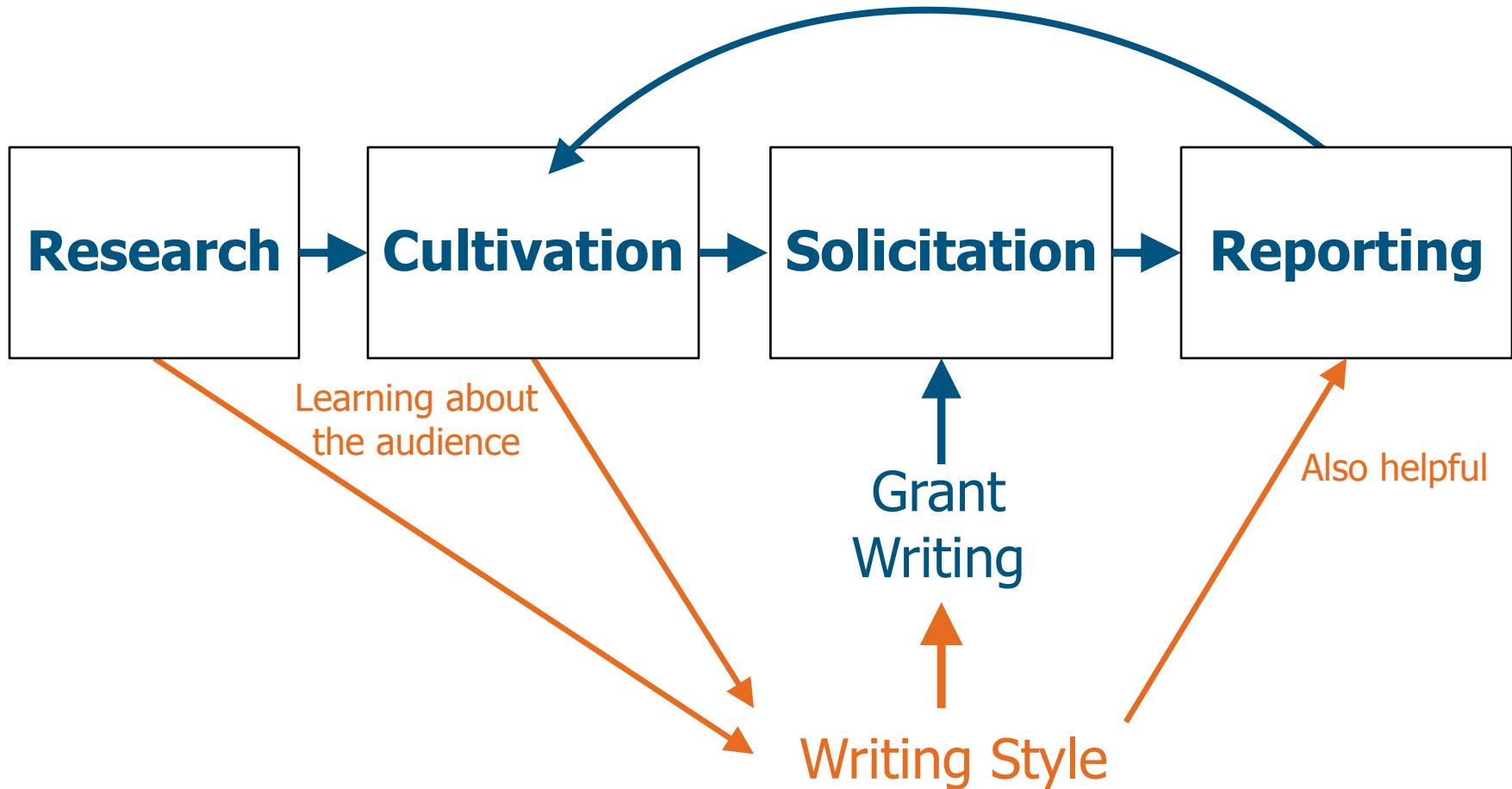
The goal for today

Use writing metrics for improved:

- Sentence length & structure
- Word length & choice
- Paragraph & proposal structure

The context

Grant writing is just part of the process



Intro to readability



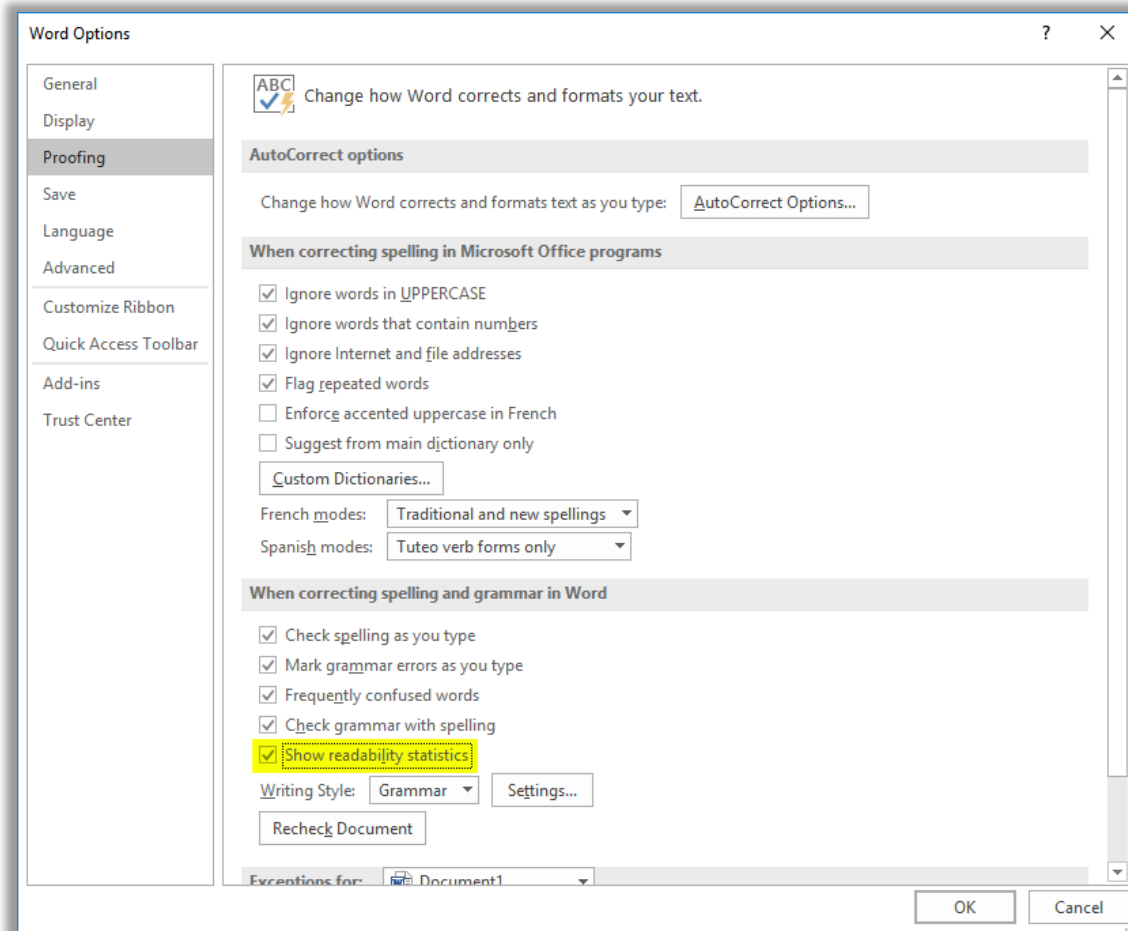
<http://www.simpsonsworld.com/video/316012099772?episode=273548355538>

Intro to readability

- Objective and easy to calculate
- Two uses:
 - Absolute: Right level for specific audience
 - Relative: Improve upon current style
- Many methods:
 - Dale-Chall (incorporates vocabulary lists)
 - SMOG and Gunning fog (formulas)
 - ATOS (big vocabulary and formulas)
 - Flesch and Flesch-Kincaid (our focus)

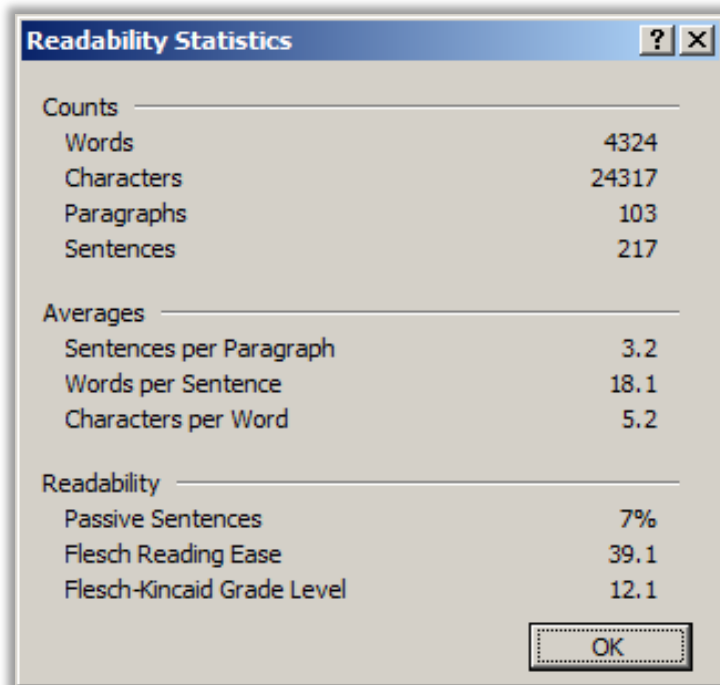
Intro to readability

Why Flesch? Because File ► Options ► Proofing
► Show readability statistics ►



Intro to readability

- Select text you want to measure
- Review ► Spelling & Grammar ►
- Click through spell checker ►
- Word finished... check remainder? Click No ►



The image shows a screenshot of a software dialog box titled "Readability Statistics". The dialog box is divided into three sections: "Counts", "Averages", and "Readability". Each section contains a list of metrics and their corresponding values. At the bottom of the dialog box, there is an "OK" button.

Readability Statistics	
Counts	
Words	4324
Characters	24317
Paragraphs	103
Sentences	217
Averages	
Sentences per Paragraph	3.2
Words per Sentence	18.1
Characters per Word	5.2
Readability	
Passive Sentences	7%
Flesch Reading Ease	39.1
Flesch-Kincaid Grade Level	12.1

Intro to readability

Both Flesch formulas use:

- Average sentence length (in words)
- Average word length (in characters or syllables)

Flesch Reading Ease

– 1.015 * words per sentence
 – 84.6 * syllables per word
 + 206.835

Flesch Reading Ease

More sensitive to long words

Scale of 0-100 (typically)

Can be correlated to grade levels

Higher = easier to read

Flesch-Kincaid Grade Level

+ 0.39 * words per sentence
 + 11.8 * syllables per word
 + 15.59

Flesch-Kincaid Grade Level

More sensitive to long sentences

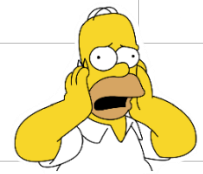
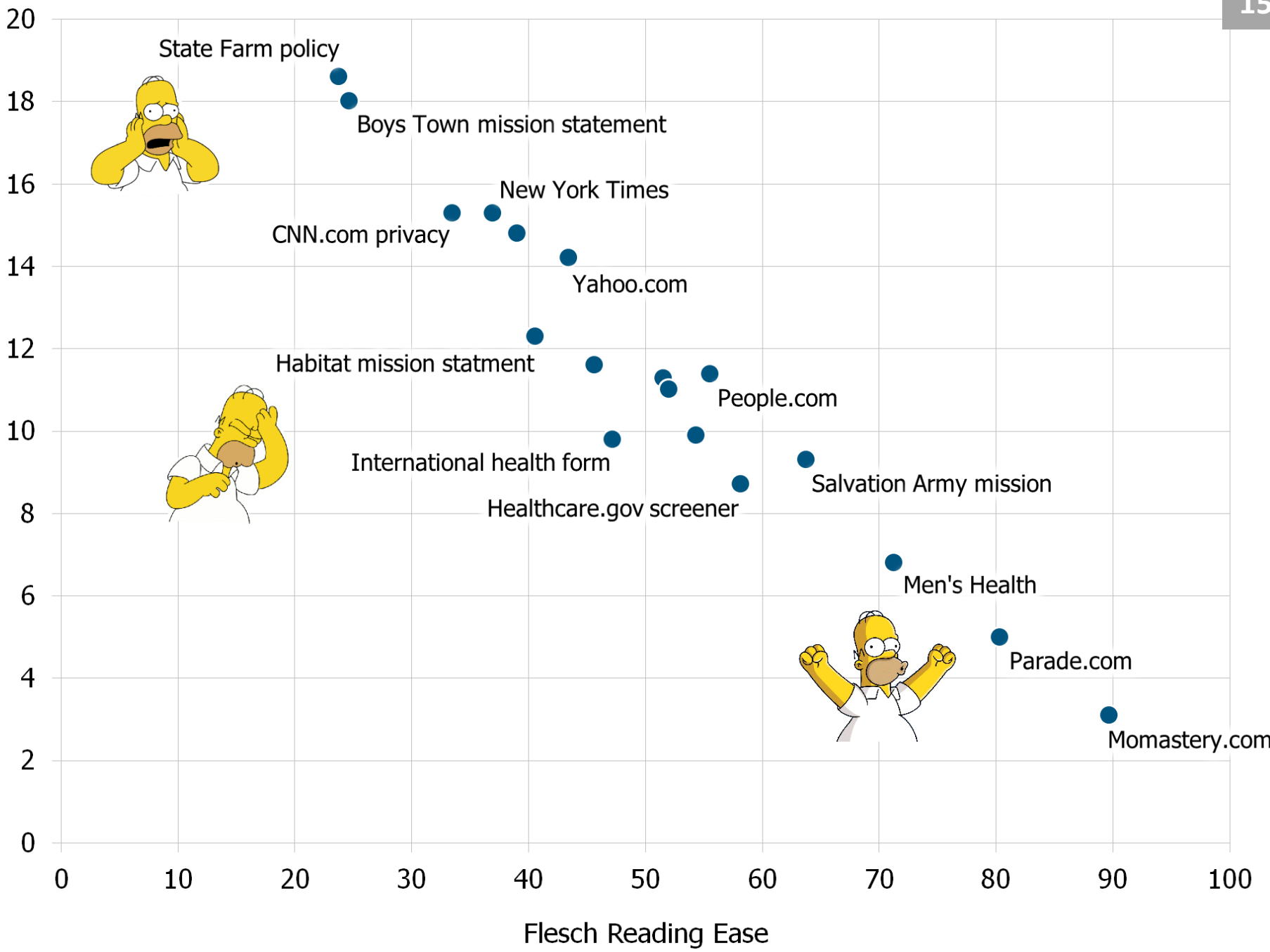
Scale of 0-20 (typically)

Score itself is a grade level

Lower = easier to read

Text	Flesch Reading Ease	Flesch-Kincaid Grade Level	Passive sentences
My State Farm homeowner's insurance policy	23.8	18.6	16%
Boys Town's mission statement	24.6	18.0	0%
CNN.com privacy policy	33.5	15.3	13%
New York Times political story	36.9	15.3	9%
Scientific American web article	39.0	14.8	6%
Habitat for Humanity's mission statement	40.6	12.3	0%
Yahoo.com political story	43.4	14.2	0%
Vox news-explainer story	45.6	11.6	9%
Health form for UNO International Admissions	47.2	9.8	15%
Instructions For Completing SF-424A	51.5	11.3	18%
CNN.com political story	52.0	11.0	10%
Gates Foundation 2016 CEO Letter	54.3	9.9	15%
People.com story about Prince George	55.6	11.4	0%
Intro to Healthcare.gov screening tool	58.1	8.7	11%
Salvation Army's mission statement	63.8	9.3	0%
Men's Health style recommendations	71.2	6.8	0%
Parade.com entertainment story	80.3	5.0	2%
Momastery.com blog post	89.6	3.1	3%

Flesch-Kincaid Grade Level



The goal for today

Use writing metrics for improved:

- Sentence length & structure
- Word length & choice
- Paragraph & proposal structure

Sentence length & structure

Simple sentences:

- Use fewer words to say the same thing
- Increase readability
- Give the reader a breather

Sentence length & structure

Long sentences are difficult to comprehend:

“A big part of what has made Amazon’s story as a company so captivating to investors is the single-minded focus of Jeffrey P. Bezos, the company’s founder and chief executive, on making big long-term investments.”

(**35** words per sentence, **4.9** characters per word, **18.6** Grade Level)

What makes Amazon’s story so captivating? Partly the single-minded focus of founder and CEO Jeff Bezos: making big long-term investments.

(**10** words per sentence, **5.7** characters per word, **10.7** Grade Level)

Write shorter sentences. It’s easy.

Sentence length & structure

Complicated sentences mask what's important:

"This is a standard form required for use as a cover sheet for submission of pre-applications and applications and related information under discretionary programs."

(**24** words per sentence, **5.7** characters per word, **16.8** Grade Level)

You must submit this standard cover sheet with your application.

(**10** words per sentence, **5.4** characters per word, **7.1** Grade Level)

Focus on the most important action.

Sentence length & structure

Passive voice is rarely helpful:

“If mechanical failure or power failure is known to you, all reasonable means must be used to protect the property insured from further damage or this coverage is void.”

(**29** words per sentence, **4.7** characters per word, **14.4** Grade Level)

If you notice the mechanical or power failure, you must take reasonable actions to protect the insured property from further damage. If you don't, this coverage is void.

(**14** words per sentence, **4.9** characters per word, **9.2** Grade Level)

Start with who is performing the action.

Sentence length & structure

Burying the best words:

“The **initial goal** is to provide multiple means of engagement in order to stimulate interest and motivation in **our students.**”

We **stimulate** and **motivate** students through multiple means of engagement, including both **individual and team activities.**

☑ Put important words at the start and end of clauses and sentences.

The goal for today

Use writing metrics for improved:

- Sentence length & structure
- Word length & choice
- Paragraph & proposal structure

Word length & choice

The right words:

- Make simpler sentences possible
- Add precision
- Add power, requiring fewer words overall
- Increase readability

Word length & choice

For word length, seek balance:

- Long words decrease readability
- Lots of short words can be bad, too:
 - Prepositions: of, at, in, on, to, by, as...
 - Sign of awkward, long sentences
- Extremes:
 - 4 characters per word means awkward sentences with lots of prepositions
 - 6 characters per word means terminology that is hard to comprehend

Word length & choice

Short words might mean poor readability:

“The YouthBuild program is a partner at the American Job Center and will pay rent as well as recruit for participants at least once per week at the center during enrollment.”

(**31** words per sentence, **4.5** characters per word, **14.0** Grade Level)

As a partner in the American Job Center, YouthBuild rents space and holds weekly recruiting events there.

(**17** words per sentence, **5.1** characters per word, **9.7** Grade Level)

Replace prepositional phrases with adjectives.

Word length & choice

Empty words, an incomplete list:

Empty word	What we mean	Potential alternatives
Program	Literally anything	Class, training, speaker series, animal rescue, research lab, policy advocacy...
Service	Anything within a program	Counseling, consulting, coaching, vouchers, money, assessment, mentoring...
Project	A time-limited program	Outreach event, seminar, conference, research trial, film production, website creation...
Facility	Where programs take place	Classroom, school, gym, training center, lab, campus, house, office building, clinic...
Information	Some letters, numbers, or images	Outcomes, description, overview, demographics, rationale, pages, photos, charts, illustrations...

Replace empty words with visual words.

Word length & choice

Dramatic adjectives say very little:

“But critics say [the Trans-Pacific Partnership] is a massive corporate giveaway that caters to the interests of huge multinationals while killing U.S. jobs.”

But critics say it is an unfair deal that encourages offshoring and gives new intellectual property protections to large multinationals, such as Apple and Sony.

☑ Adjectives should describe type, not degree.

Word length & choice

Acronyms and abbreviations:

- Easy to use b/c short, we heard them b4, used frequently in office eml
- Even when defined, says to reader: YOYO
- Can cre8 confusion
- Often leave me SMH

☑ Avoid acronyms, unless they are familiar to your entire audience.

Word length & choice

Examples of acronyms you can use and when:

Acronym	What it stands for	Appropriate audience
NBC	National Broadcasting Company	Pretty much any U.S. resident who has watched TV before.
IRS	Internal Revenue Service	Pretty much any U.S. resident, but especially people involved in philanthropy.
PI	Principal Investigator	People involved in funding or conducting investigator-led research.
NAFSA	National Association of Foreign Student Advisors	Professionals in international education. Now the Association of International Educators.
TFM	Teaching-Family Model	Social workers and counselors who know something about group foster care.
WIOA	Workforce Innovation and Opportunity Act	People involved in federally funded workforce development, but it annoys them, too.
BTCA IHFS	Boys Town California In-Home Family Services	A few dozen people who work for and with this program, and that's it.

Word length & choice

Grammatical person:

- First person plural – we, our, ours – is a lot shorter than your organization's name
- Expresses ownership
- May seem informal, but do we care?
- Makes bureaucracies disappear
- Can be overdone

Use “we” unless you have a real reason not to.

Word length & choice

Acronyms and grammatical person:

“The Office of International Studies & Programs (IS&P) at the University of Nebraska at Omaha (UNO) is a one-stop shop for international students and scholars. UNO IS&P will coordinate all aspects of the scholars’ 10-week program in the United States.”

(**21** words per sentence, **4.7** characters per word, **13.1** Grade Level)

Our office is a one-stop shop for international students and scholars. We handle all aspects of the scholars’ 10-week experience – logistics, academics, and cultural immersion.

(**13** words per sentence, **5.5** characters per word, **12.1** Grade Level)

Word length & choice

Overused words:

- In personal writing, we use “I” too much
- “We” may pose same problem
- To measure this issue in Word:
 - CTRL+F (Find)
 - X matches in upper left
 - Divide by number of sentences
 - Matches per sentence should be way less than 0.5

Word length & choice

Overusing “we” (or any word):

“We partner with businesses, government agencies, and nonprofits in the community, creating an innovative applied learning environment. Seven years running, we have earned a place on the President’s Higher Education Community Service Honor Roll. We also excel in global engagement.” (1.0 we’s per sentence)

Our faculty members partner with businesses, government agencies, and nonprofits in the community, creating an innovative applied learning environment. Seven years running, the university has earned a place on the President’s Higher Education Community Service Honor Roll. We also excel in global engagement. (0.3 we’s per sentence)

Check for and replace overused words.

The goal for today

Use writing metrics for improved:

- ☑ Sentence length & structure
- ☑ Word length & choice
- ☑ Paragraph & proposal structure

Paragraph & proposal structure



“The Fantasy Island”
at Leo’s Diner in Omaha
(Nuthin’ Finer!)



Bento Box

Paragraph & proposal structure



Exhausting. No breaks and 90 characters per line.



Some relief with headings and sub-heads.

Paragraph & proposal structure

- The default is not actually best for readability.
- Sort supporting details and use an outline:
 - Thesis statement
 - Topic sentence 1
 - Supporting details
 - Topic sentence 2
 - Supporting details

Use an outline and serve bite-size portions.

Paragraph & proposal structure

Numbers hide in paragraphs, making comparisons difficult:

“Relative to household income, housing costs in Northeast Omaha exceed costs across the metro area and the country. The percentage of households with high housing costs (those who pay 30 percent or more of household income) among both owners and renters is 43 percent in Northeast Omaha, compared to 34 percent in Omaha and 37 percent nationwide.”

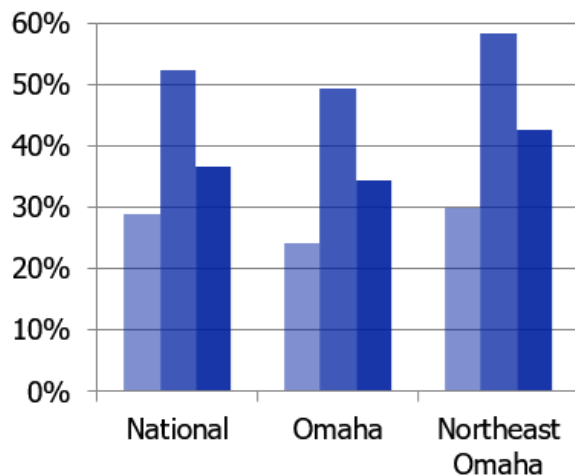
Paragraph & proposal structure

Relative to household income, housing costs in Northeast Omaha exceed costs across the metro area and the country, further squeezing the budgets of our low-income families.

Housing Cost Burden

Percent of households whose housing costs exceed 30% of income

■ Owned ■ Rented ■ All occupied



Source: Census ACS 2013 5-year

Housing Cost Burden

Percent of households where housing costs exceed 30% of income

	National	Omaha	Northeast Omaha
Owned	29%	24%	30%
Rented	52%	49%	58%
All households	37%	34%	43%

HOUSING COST BURDEN

% of households where housing costs exceed 30% of income
(Including owners and renters)

37% -- National

34% -- Omaha

43% -- Northeast Omaha

Show numbers in tables or charts.

Sentence length & structure:

- ✓ Write shorter sentences. It's easy.
- ✓ Focus on the most important action.
- ✓ Start with who is performing the action.
- ✓ Put important words at the important spots.

Word length & choice:

- ✓ Replace prepositional phrases with adjectives.
- ✓ Replace empty words with visual words.
- ✓ Adjectives should describe type, not degree.
- ✓ Avoid acronyms that are unfamiliar to readers.
- ✓ Use "we" unless you have a real reason not to.
- ✓ Check for and replace overused words.

Paragraph & proposal structure:

- ✓ Use an outline and serve bite-size portions.
- ✓ Show numbers in tables or charts.

Let's practice

- Write one sentence that accurately describes your organization, program, or project.
- Choose the right subject and verb(s).
- Rewrite.
- Evaluate in light of our checklist.
- Rewrite.
- Evaluate:
 - Have we improved readability?
 - Is it more compelling, tangible, visual?
 - Have we lost anything? Is that OK?

Practice example

Boys Town is changing the way America cares for children, families, and communities by providing and promoting an Integrated Continuum of Care that instills Boys Town values to strengthen body, mind, and spirit.

(**33** words per sentence, **5.2** characters per word, **18.0** Grade Level)

Boys Town strengthens children and families in body, mind, and spirit.

Boys Town provides and promotes a better approach to caring for children, families, and whole communities.

Boys Town saves children, heals families, and advocates for a better behavioral health care system.

(**15** words per sentence, **5.4** characters per word, **10.7** Grade Level)

Sources and Credits

How to Write Plain English
by Rudolf Flesch (1981)

Derivation of New Readability Formulas for Navy Enlisted Personnel
by Peter Kincaid et al (1975)

The Classic Guide to Better Writing
by Rudolf Flesch (1996)

The Simpsons: Homer's Triple Bypass (Season 4, Episode 11)
FX Networks LLC