

Scholarship Skills

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Lecture 4: Core Rules for Better Writing

Core Rules for Better Writing

- Good writing is clear, concise, and simple.
- Good writing is easy to read. A good paper educates the reader without frustrating him or her. Write to be understood, not to impress.
- The “Core Rules” on the next few slides will help you write better. The rules *do not* cover everything that we will talk about. They *do* provide several important guidelines that, if followed, will dramatically improve your writing.

USE ACTIVE VOICE

PASSIVE VOICE: It is felt that you should re-write your research proficiency paper. (Notice that the subject is missing.)

ACTIVE VOICE : Professor Leen feels you should re-write your research proficiency paper. (The subject is explicit, so the sentence is more informative.)

PASSIVE: The glass was broken by Tim.

ACTIVE: Tim broke the glass. (Notice that this is more concise than passive voice.)

PASSIVE: Using a probabilistic approach, speech features can be mapped using a Gaussian mixture model. (Again, the subject is missing.)

ACTIVE: Stylianou et al. [22] use a probabilistic approach to map speech features. (Including the subject is more informative.)

USE ACTIVE VOICE

PASSIVE: My first visit to Boston will always be remembered by me.

ACTIVE: I will always remember my first visit to Boston. (More concise and more forceful.) [e.g. from Strunk and White]

PASSIVE: There were a great number of dead leaves lying on the ground.

ACTIVE: Dead leaves covered the ground. (More concise and more forceful.) [e.g. from Strunk and White]

PASSIVE: To get advice, an expert must be consulted. (Subject is missing.)

ACTIVE: To get advice, you must consult an expert. [Dupre] (Active voice is more direct.)

USE ACTIVE VOICE

Active voice is more specific, and therefore more informative and clearer than passive voice. (In passive voice, the subject is often missing.)

Active voice is frequently more concise than passive voice.

Active voice is more direct and forceful.

**IF YOU DO NOTHING MORE THAN
CONCENTRATE ON USING ACTIVE
VOICE, YOUR WRITING WILL
IMPROVE!**

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

- Within sections of a paper (except the introduction):

Put KEY IDEAS in LEAD POSITION. The introductory paragraph in a section should summarize the key ideas in that section. The following paragraphs get more specific about the details of the key ideas. Thus the paragraphs within a section move from the general to the more specific, from the most important to the least important.

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

Within each paragraph

Put KEY IDEAS in LEAD POSITION. The first sentence in a paragraph should carry the most important ideas. The following sentences flesh out the particulars of the ideas. Thus, sentences within a paragraph move from general to more specific.

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

3.2 Application of Poisson Spike Trains.

Following the diagonal arrows in the scheme, P is upregulated at each postsynaptic spike proportional to $P(S-U)$, and downregulated at each presynaptic release proportional to $(1-P)(S-U)$. The expected change of P at time t is obtained from the kinetic scheme according to ...

3.2 Application of Poisson Spike Trains. Next we investigate the average behavior of our spike-based learning rule when applying nonstationary Poisson spike trains. Following the diagonal arrows in the scheme, P is ...

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

The fly's optomotor response is interesting from an engineering standpoint because it extracts relevant information from a dynamic, unstructured environment on the basis of passive sensors. The system is implemented in biological hardware that is many orders of magnitude smaller and more power efficient than charge-coupled device (CCD) imagers coupled to a conventional digital microprocessor. **Flies use this visual motion information to estimate self-rotation and generate a compensatory torque response to maintain stability during flight.**

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

Flies use visual motion information to estimate self-rotation and generate a compensatory torque response to maintain stability during flight. The fly's optomotor response is interesting from an engineering standpoint because it extracts relevant information ...

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

EXCEPTION: When you're trying to persuade the audience, you can lead them along and give the key idea, or punchline, at the end. This is frequently used in mathematical development.

However don't overuse this format, particularly when the argument is long. When you use it for a mathematical development, the lead sentence in the paragraph should be used to tell the reader what you're about to do. (That is, it helps to give away the punchline up front.)

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

Consider first Newton's second law

$$F = m \frac{dV}{dt} \quad (1)$$

and integrate both sides over a displacement

$$\int_0^x F dx = m \int_0^x \frac{dV}{dt} dx \quad (2)$$

substitute ...

Hence we've shown that work equals the change in kinetic energy.

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

Next we show that work equals the change in kinetic energy. Consider first Newton's second law

$$F = m \frac{dV}{dt} \quad (1)$$

and integrate both sides over a displacement

$$\int_0^x F dx = m \int_0^x \frac{dV}{dt} dx \quad (2)$$

substitute ...

ORGANIZE TO HELP THE READER

Put Key Ideas in Lead Position

Putting key ideas in lead position

- Helps prepare the reader for what's coming
- Allows the reader to skim efficiently.

DON'T MAKE UNSUBSTANTIATED STATEMENTS

- Statements of belief or of fact should be backed up either by i) a specific result of your own work or ii) explicit citations to the literature.

DON'T MAKE UNSUBSTANTIATED STATEMENTS

- Don't use phrases like

“It is common knowledge ...” or “It is generally believed ...”, or “Several researchers have shown ...”.

Instead use constructs like “Hartman [23], Goolickan [24], and Brotman [25] show that ...” or “Recently several researchers have shown that ... [23,24,25].” or “Many researchers [see for example 23,24,25] believe that ...”

BE CONCISE

Avoid wordiness.

Instead of these

due to the fact that
in light of the fact that
in order to
in view of
on behalf of
after this is accomplished
in case
along the lines of

Use these

because
since
to
since
for
then
if
like

BE SIMPLE

Avoid “fancy” words

Instead of these

Use these

subsequently
modification
necessitate
endeavor
demonstrate
utilize

next
change
require
try
show
use

USE A CONSISTENT LEXICAL SET

Use the same word to refer to a concept throughout the paper. Don't use "swoondigger" in one place, and "pomponicator" in another place, unless they are generally accepted synonyms. Although it may be obvious to you that these are synonymous, the reader may have doubts.

USE A CONSISTENT LEXICAL SET

- When you make an exception and use several terms to refer to the same concept, make sure you tell your reader that you are using the terms synonymously:

“Here we use a swoondigger, or pomponticator, to force coherence between ...”

DEFINE TERMS WHEN FIRST INTRODUCED

Don't make the reader guess what you mean until the last section of the paper, where you finally get specific about your meaning of a term.

DEFINE TERMS WHEN FIRST INTRODUCED

Types of definitions:

– Full sentence

- The term has more than one meaning or the audience probably does not know the term, the definition is controversial (no agreed standard definition)

– Phrases

- The term has more than one meaning and you are clarifying which meaning you adopt. The audience probably does know the term, but you are including a definition to avoid ambiguity. The definition was controversial in the past.

AVOID SINGLE SENTENCE PARAGRAPHS

Single sentence paragraphs are usually an indication that there's a problem with organization. Figure out where the idea belongs.

It may be that it's not important enough to develop into its own paragraph, but doesn't fit in one of the existing paragraphs. If that is the case, then remove it!

Re-Write

When you re-write (especially a section, paragraph, or sentence that you know is difficult to read) keep asking yourself “what do I really mean?” Allow yourself several passes to get rough spots really concise, really simple, and really clear.

A good way to get more concise is to ask yourself if words in a sentence, or sentences in a paragraph are helping you make the key points, or can they be discarded.

Core Rules for Better Writing

(Pin them to your monitor so they're in front of you as you write!)

Use active voice.

Put KEY IDEAS in LEAD POSITION of sections and paragraphs.

Don't make unsubstantiated statements.

Be concise.

Be simple.

Use a consistent lexical set.

Define terms when first used.

Avoid single sentence paragraphs.

Rewrite with an intent to make things simpler, more concise, and clearer.