

THE ROLE OF THE ESAP
PRACTITIONER IN SCIENCE
RESEARCH WRITING:
IT'S ONLY ROCKET SCIENCE.

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Ignorance is not lack of intelligence; nor is knowledge a proof of genius.

(Luc de Clapiers)

QUICK OVERVIEW

CONTENT KNOWLEDGE vs. CONTENT IGNORANCE

THE CHANGING NATURE OF SCIENCE RESEARCH WRITING

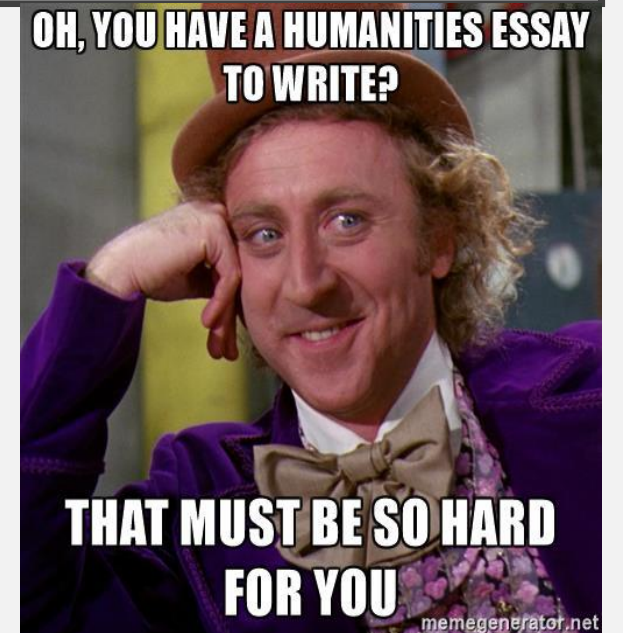
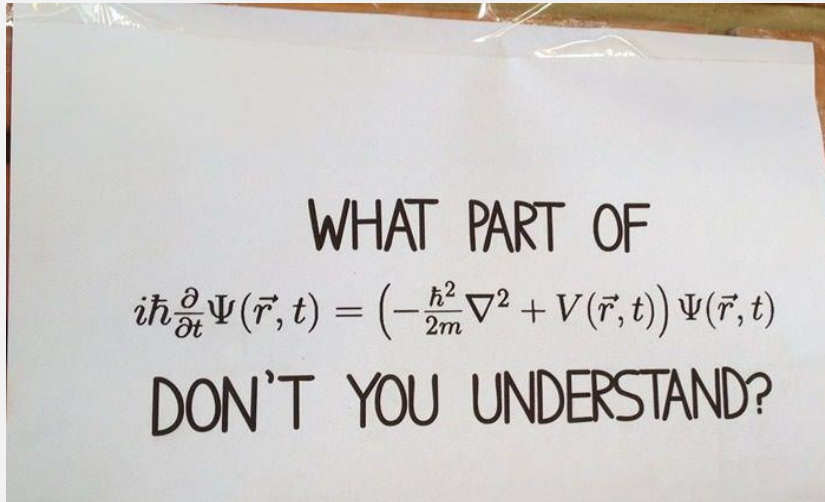
THE REVERSE-ENGINEERING APPROACH

THE ROLE OF THE ESAP PRACTITIONER

CONTENT KNOWLEDGE vs. CONTENT IGNORANCE

STEM writing vs. Humanities/Social Science writing

Inevitability of STEM ignorance



SOME FUN TITLES

A molecular dynamics study of the Gibbs free energy of solvation of fullerene particles in octanol and water

Delamination control in composite beams using piezoelectric actuators

Organic vapour phase deposition: a new method for the growth of organic thin films with large optical nonlinearities

Silica encapsulated heterostructure catalyst of Pt nanoclusters on hematite nanocubes: synthesis and reactivity

The osteogenic response of mesenchymal stromal cells to strontium-substituted bioactive glasses

An energy-based damage mechanics approach to modelling impact onto woven composite materials

A contrast-sensitive channelized-Hotelling observer to predict human performance in a detection task using lumpy backgrounds and Gaussian signals

Pairwise decomposition of image sequences for active multi-view recognition

A GPU-Tailored Approach for Training Kernelized SVMs

Life cycle inherent toxicity: a novel LCA-based algorithm for evaluating chemical synthesis pathways

3D reconstruction of SOFC anodes using a focused ion beam lift-out technique

ADVANTAGES OF IGNORANCE

DISADVANTAGES OF UNDERSTANDING CONTENT

compensation → loss of objectivity

involvement → improvement

ownership?

ADVANTAGES OF **NOT** UNDERSTANDING CONTENT

writing/discourse issues stand out

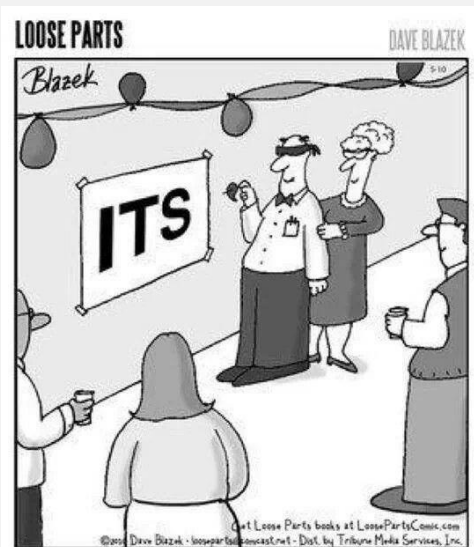
clear boundary

ownership issues not your problem

COSMETIC ISSUES VS. READABILITY ISSUES

COSMETIC ISSUES

easy to identify
easy to fix
text looks nicer



The games get pretty crazy
at English teachers' parties.

READABILITY ISSUES

easy to identify
require our expertise
text makes sense



THE CHANGING NATURE OF STEM RESEARCH WRITING

Why is it changing?

- global nature of STEM research
- unprecedented access
- ‘information-surfing’
- inter-disciplinary readership

How is it changing?

TITLES

ABSTRACTS

METHODS

CONCLUSIONS



BEING TOLD WHAT TO DO IS NOT THE SAME AS KNOWING HOW TO DO IT 😞

GENRE-BASED 'HELP' *THE DISCUSSION SECTION*

Highlight the most significant results, **HOW?** but don't just repeat what you've written in the Results section. **WELL HOW DO I DO THAT?** Show how these results relate to the original question. **HOW?** Discuss the extent to which your data support your hypothesis. **HOW?** Discuss whether or not your results are consistent with what other investigators have reported. **HOW EXACTLY?** If your results were unexpected, try to explain why. **TELL ME HOW, DAMMIT!** Look at alternative ways to interpret your results. **HOW DO I DO THAT?** Discuss how your results fit into the big picture. **OH, FOR PETE'S SAKE!!**

INSTRUCTIONS TO AUTHORS *WRITING THE TITLE*

Use brief and informative titles. **HOW BRIEF??** Make your title specific enough to describe the contents of the paper, but not so technical that only specialists will understand. **WHAT DO YOU MEAN?** The title should be appropriate for the intended audience. **HOW CAN I MAKE SURE OF THAT?** The title usually describes the subject matter of the article. **HELP!!**

THE TEMPLATE-BASED APPROACH: A RECOGNISABLE FACSIMILE

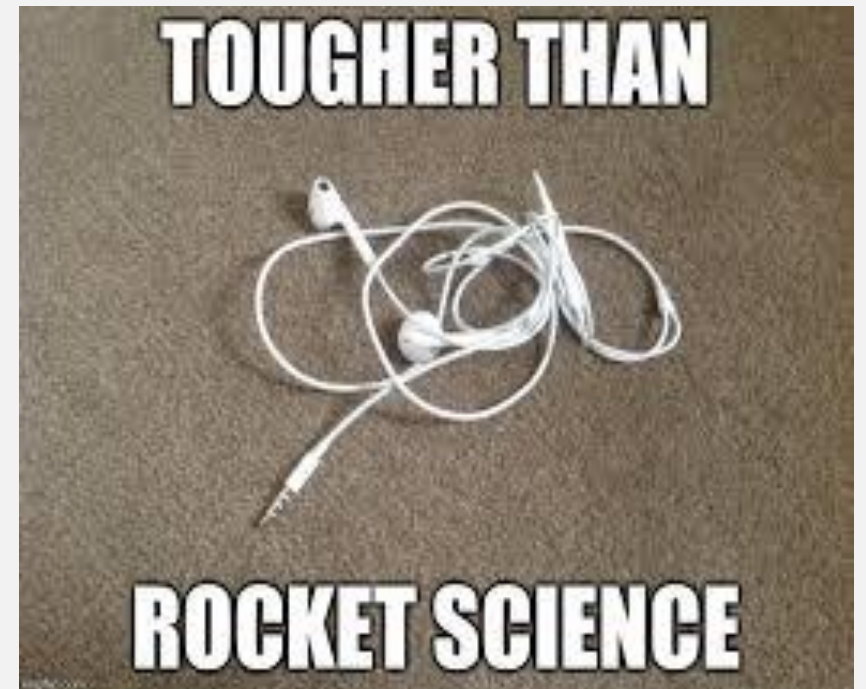


TEMPLATE-BASED PINCER APPROACH

ESAP PRACTITIONER trains the writer to mine the target text for

- sentence functions
- balance
- conventional syntax and discourse markers
- conventional vocabulary
- conventional grammar

...and sets up **readability questions**



MINING THE VOCABULARY

VERBS USED TO REFER TO/DESCRIBE PREVIOUS AND CURRENT LITERATURE

achieve	clarify	determine	focus on	note	report
address	collect	develop	generate	observe	resolve
analyse	compare	discover	identify	obtain	reveal
apply	conclude	discuss	imply	perform	revise
argue	conduct	enhance	improve	point out	review
assess	confirm	establish	interpret	predict	show
assume	consider	estimate	introduce	present	solve
attempt	create	evaluate	investigate	produce	study
calculate	define	examine	measure	propose	support
categorise	demonstrate	explain	mention	prove	suggest
carry out	describe	explore	model	provide	test
challenge	design	extend	modify	put forward	use
claim	detect	find	monitor	recognise	verify

READABILITY QUESTIONS

Why are you telling the reader this?

What's the function of this paragraph? Have you made it explicit?

What's the connection between these two sentences?

Are you sure that's how this concept is written in your field?

Are these two things the same, and if so, why have you changed the terminology?

What does THIS/IT etc. refer to here?

Can you break this 60+ word sentence into two, and link them explicitly?

Does every potential reader know this or do you need to provide more information?

Who is 'talking' in this sentence?

ADVANTAGES OF TEMPLATE-BASED APPROACH

- any text type
- authentic input
- safe initial strategy
- speed
- lifelong tool
- compensates for language errors
- descriptive, not prescriptive
- limited language set



KEY MESSAGES

Content knowledge is not necessary.

Lifting off the scaffold and the language is what we're good at, and means we can switch from one obscure topic to another without blinking.

The ESAP practitioner is central to the success of STEM writing.

Training writers to imitate successful current STEM writing is as important as language training

IT'S ONLY ROCKET SCIENCE, AFTER ALL 😊

Writing is easy. All you do is stare at a blank sheet of paper until drops of blood form on your forehead.

Gene Fowler

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