Scaffolding research proposal writing through peer review: Nexus of science writing and generic learning advising

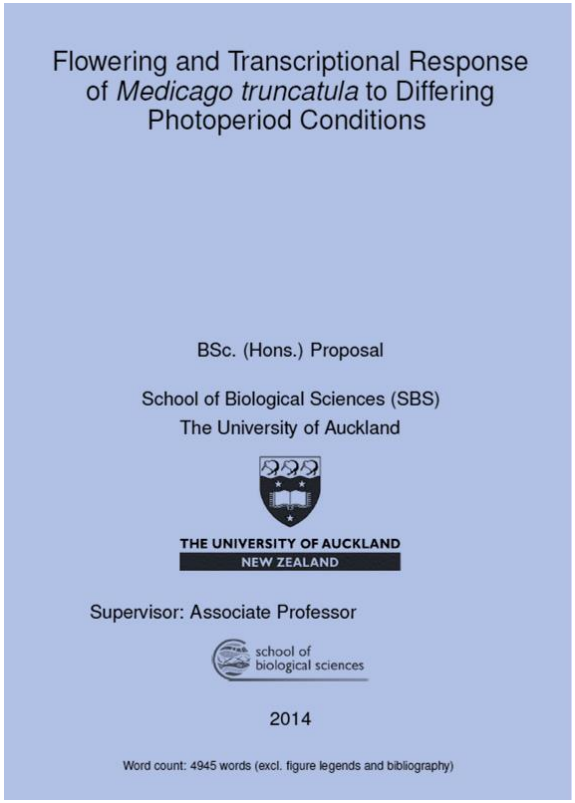
Marion Blumenstein & Liz Hardiman

Student Learning Services

Critical Intersections: the 12th Biennial Conference of the Association for Academic Language and Learning, University of Wollongong 25-27th November 2015

Research proposals - what's the problem?

- A first substantial piece of writing transitioning into PG study
- Research proposals as 'occluded' genre (Swales in Paltridge & Starfield, 2007)
- A key element to the successful thesis (Madsen, 1992)



Flowering and Transcriptional Response of *Medicago truncatula* to Differing Photoperiod Conditions

BSc. (Hons.) Proposal

School of Biological Sciences (SBS)
The University of Auckland

THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

Supervisor: Associate Professor

school of biological sciences

2014

Word count: 4945 words (excl. figure legends and bibliography)

The scientific research proposal is linear

- Title
- Summary
- Background
- Aims & objectives
- Research methodology
- Anticipated problems/limitations
- Significance
- Resources & Timeline

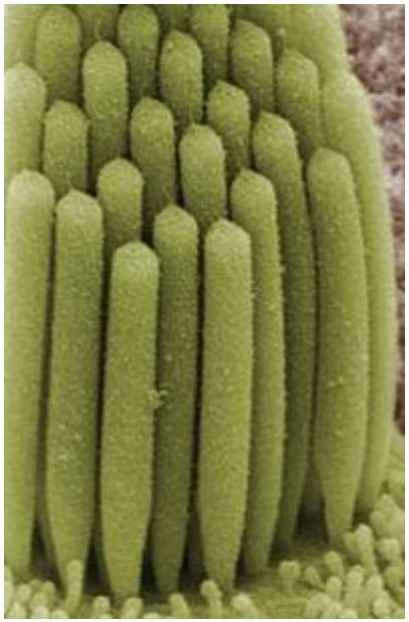


Image: https://commons.wikimedia.org/wiki/File:Stereocilia_of_frog_inner_ear.01.jpg#

Theories, methods, data…are rhizomatic

All four thesis elements identified by Phillips & Pugh (2005) need to be addressed in a research proposal:

I. Background to the study (current & future state, debates, theories)
II. Focal theory (what & why)
III. Data theory (data choice)
IV. Contribution (significance for the field)

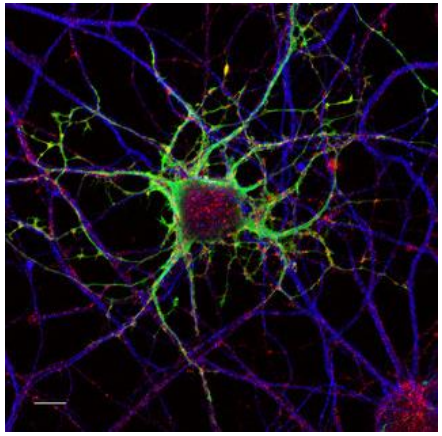


Image (confocal microscopy of neurons): https://www.flickr.com/photos/zeissmicro/8695004301.

"Scientists must write!"*

- Irony of training emerging scientists and engineers in highly sophisticated techniques and the lack of formal scientific writing training. **Robert Barrass (2002)*

- Writing in the disciplines as a conception of learning.

Michael Carter et al. (2007)

Embedding writing workshops in preparation for thesis research

Biology course: BIOSCI 761/2, 15-points over 1 semester

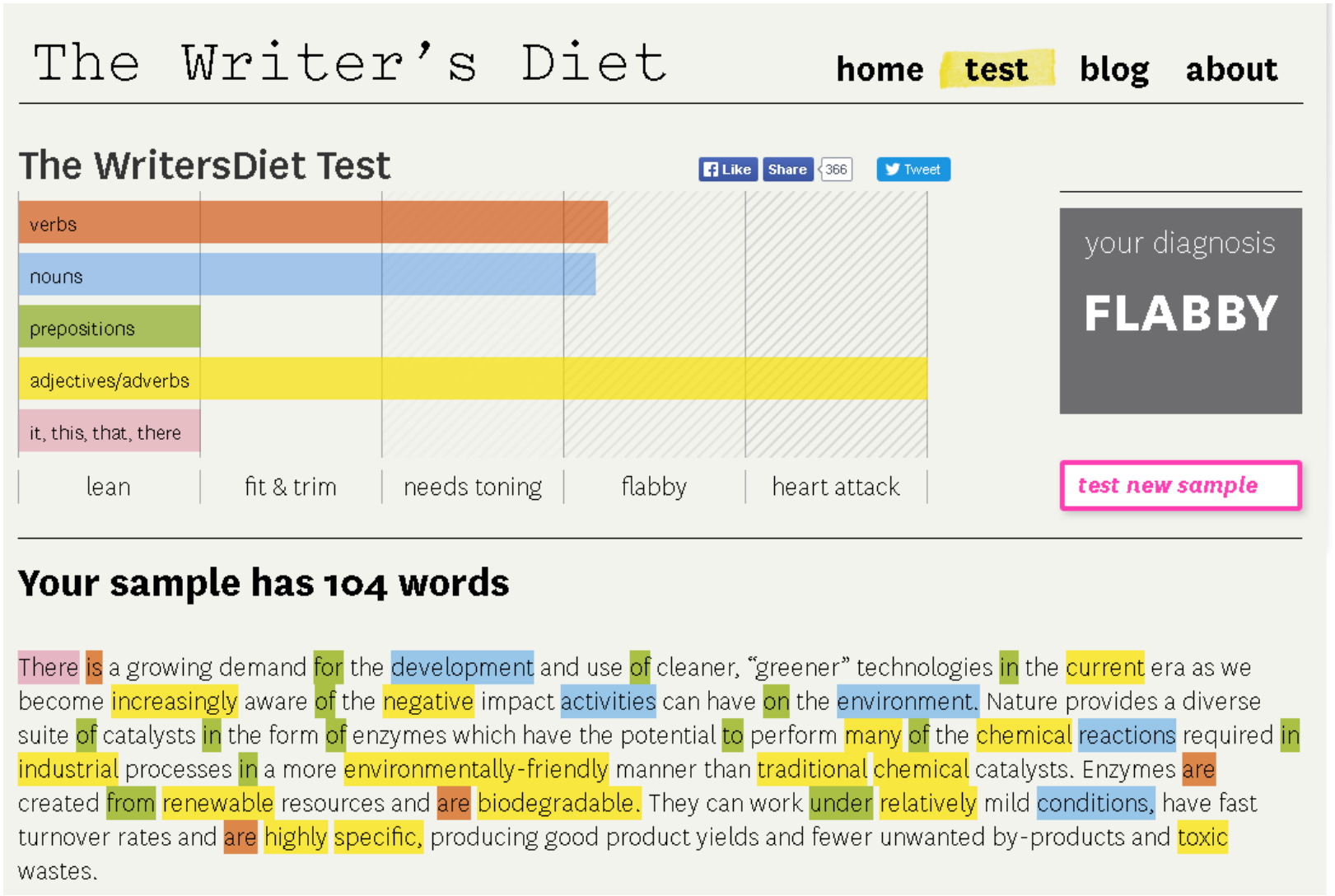
Enrolment: 25-40 BSc (Hon) and MSc students per semester

Assessment: 100% in-course

- Attendance and participation in LA writing sessions (10%)
- Departmental seminar presentation (20%)
- Submission of a written research proposal (70%)

Learning outcomes & activities

- **Pre-planning the proposal**
  - Title development
  - Mind mapping the topic
  - Exemplars & overall proposal structure
- **Scientific writing**
  - Paragraph structure
  - Writing (proposal abstract, TED talk summary)
  - Peer review
  - Writing diagnostic



http://writersdiet.com/writersdiet-new/?page_id=4

Study: Students' perception on writing hurdles and support

Data collection:

- Summative course feedback (N=27, S1 only)
  - What I liked most
  - What I learnt
  - What could be improved
- Survey: open-ended questions (N=20, 27% response rate)
  - Q1: Key road blocks in writing the proposal
  - Q2: Supporting scientific writing development
  - Q3: Other comments

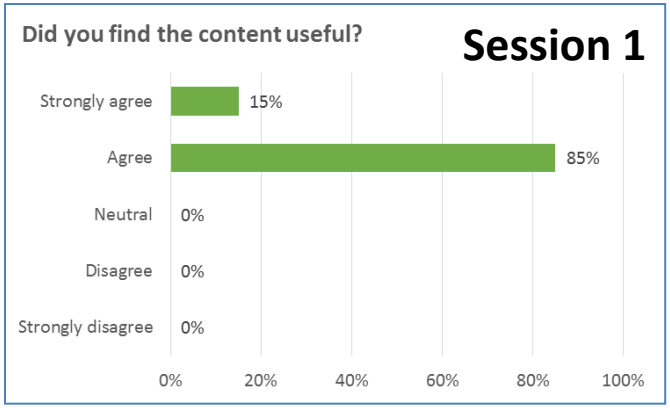
Results – Summative feedback

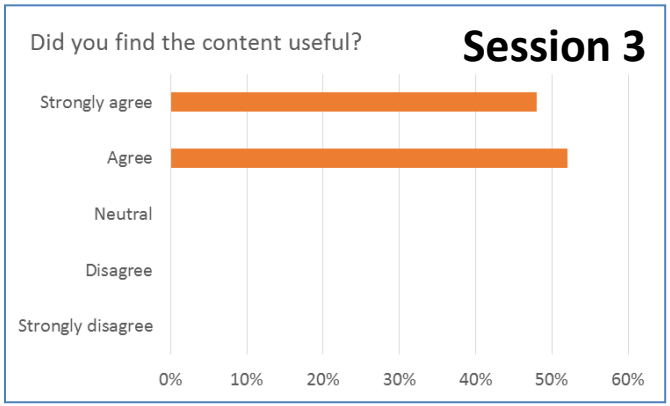
Students liked:

- Interactive "not just another lecture"
- Examples of poor and good writing
- Writing tips and web resources
- Non-judgemental environment "unscary"

Students learnt about:

- Paragraph structure
- Writing is subjective
- The need of writing practice
- Their own writing style
- Peer review process





Shift of perception about the peer review (N=27)

Results - Questionnaire: Road blocks

- "Getting started"
- "Repeating myself a bit and waffling about nothing"
- "Developing a good structure"
- "Formatting requirements"
- "The methodology…I have never used before. So I had to discuss it minimally and in general terms until I have the opportunity to learn how to use it."
- "Finding information was easy but then go and condense it down was more difficult."

Results – Questionnaire: Science writing support

- "Staged writing feedback from peers and experts"
- "Online tools"
- "More access to exemplars"
- "Starting early on in the process and more drafting"
- "More periodic deadlines"
- "Writing groups (online and face-to-face)"

The flipside of peer review & writing groups

"Peer review and feedback on exercises that is not relevant to the proposal, ie the TED talk summary."

"It would be more a more productive exercise with feedback from experts rather than people who do it for the first time."

"Personally I need to be alone when I am writing, so writing groups would not help me."

Structure changes a reflection of increasing complexity

- Doubts about ordering the literature review or methods as understanding of complexities deepens
- Changes in structure reflect full engagement with the topic

Image: https://www.flickr.com/photos/marfis75/10826571406/in/gallery-ronile-72157629607799570/

The research proposal: Legitimate peripheral participation in a CoP Lave & Wenger, 1991

Writing…

- …in the discipline (biology) as socialization into the discipline
- …as an authentic activity in a community of practicing scientists
- …review by peers as a legitimate professional scientific genre

Picture downloaded from www.fmhs.auckland.ac.nz/en/faculty/healthex/

So, how to teach writing in the disciplines?

"We have certain expectations about structure. I don't know how to describe them to you, but we give students examples and hope they see what it should look like."

(Philosophy Professor cited in Parry, 2007, p. 96)

Design criteria for embedded writing session

- Have an online presence, provide lots of examples
- Clear guidelines about the peer review process, i.e. etiquette, expectations, limitations
- Close the feedback loop (involve supervisors)
- Align learning outcomes with overall goals of the course, i.e. integration of authentic writing exercises

"My e-research proposal"

My question

- Title development
- Key words
- Hypotheses
- Conceptualising research
- My notes

My literature

- Key articles
- Annotated bibliography
- Read and review
- My notes

My proposal

- The abstract
- The background section
- Aims & objectives
- Significance
- Methods
- Resources and budget
- Timelines

Resources

- Thesis writing
- Writing for publication
- Referencing
- Subject guides
- Finding articles


THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

Thank you!