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A little learning is a dangerous thing

The 'language problem' and select issues with faculty courses, team-teaching, feedback, and impact

Magnus Gustafsson
November 2, 2017

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A little learning is a dangerous thing!

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From Bacon to Pope!

- Sir Francis Bacon, The Essays: On Atheism, 1601

  "A little philosophy inclineth man's mind to atheism; but depth in philosophy bringeth men's minds about to religion."

- Alexander Pope, An essay on Criticism, 1709

  A little learning is a dangerous thing;
  drink deep, or taste not the Pierian spring:
  there shallow draughts intoxicate the brain,
  and drinking largely sobers us again.

The phrase finder: https://www.phrases.org.uk/meanings/a-little-knowledge-is-a-dangerous-thing.html

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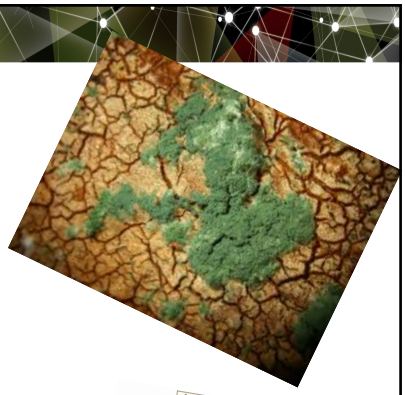
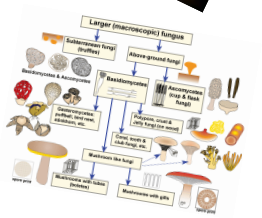


- Division for Language and Communication
- 12 faculty + contracts
- BSc, MSc, Elective, PhD, and Faculty courses
  100+ courses and activities; Swedish/English; Specific / Academic / Workplace / Professional; in 20+ programmes
- Chalmers Writing Centre
- Research
  disciplinary and professional discourse; self-regulation; peer response; writing-to-learn; intercultural communication; online learning affordances



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One of my concerns: Faculty courses

- A history of faculty training courses
  - Teaching in English I and II (III) all at '3-credit' level
  - RPL in the university higher education diploma
- Included in the university higher education diploma!
  - Writing for publication and for constructive alignment, 3 credits
  - Project course: Course development for constructive alignment and professional practice, 3 credits
- Today a 5-credit course:
  - Enhancing learning through writing
    - A writing project of their own
    - A course revision project that involves student writing in some way

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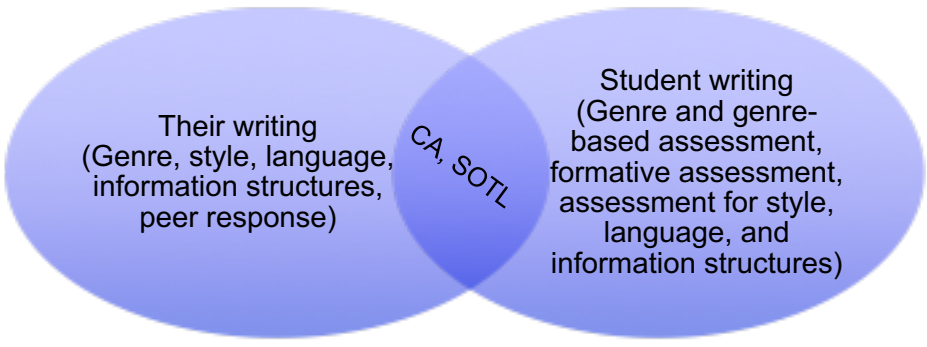
Overlapping course dimensions!



But the degree of overlap and the size of the two will differ for all faculty!

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Constructive alignment

*How to build a **consistent** system:*

1. **Formulate learning objectives**
   Guiding the character the course …
2. **Match teaching to objectives**
   They can't learn without activities…
3. **Match assessment to objectives**
   Make sure you test what you are after…

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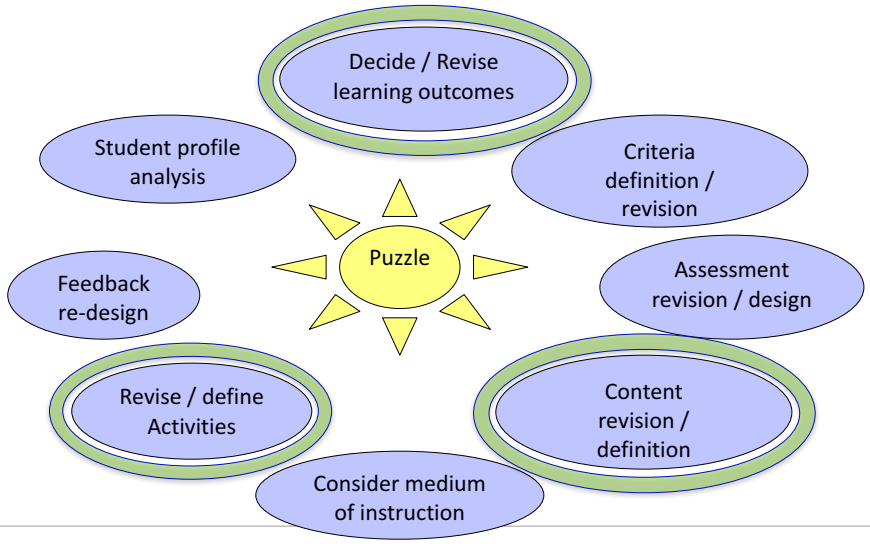
The constructive alignment sun!



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Multi-level constructive alignment!

PROGRAMME					ILO				
COURSES				ILO	ILO	ILO			
ASSIGNMENTS			ILO	ILO	ILO	ILO	ILO		
SECTIONS of ASSIGNMENTS		ILO	ILO	ILO	ILO	ILO	ILO	ILO	
FEATURES of SECTIONS	ILO	ILO	ILO	ILO	ILO	ILO	ILO	ILO	ILO

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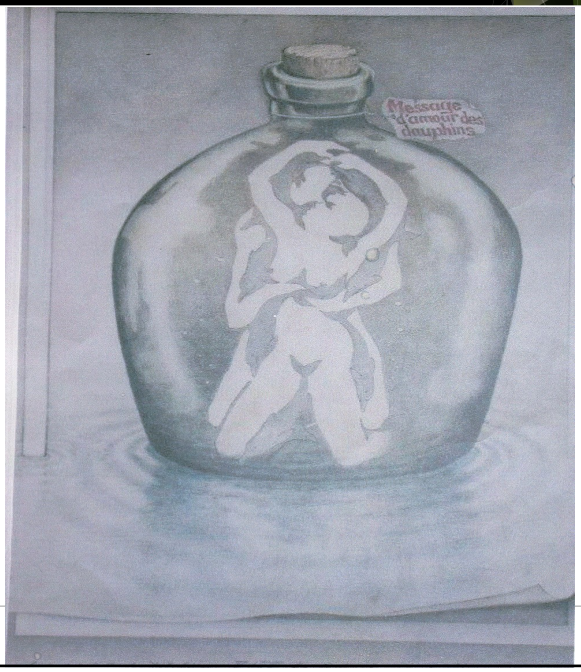

The trick is to see beyond the obvious level of the 'concept' and the dolphins that accentuate the couple.

Similarly for many threshold concepts – they change character once we REALLY understand them.

There is a risk that we settle in our ILOs or our learning for seeing the couple as it were!

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What about the 'language barrier'?

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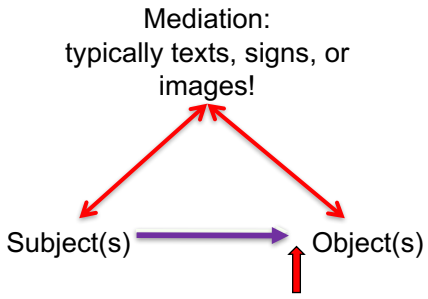
Communication is mediated (duh!)



So, if students don't meet learning outcomes, is that because they haven't met the outcomes or because they cannot express their understanding?

There is no 'avatar assessment' ;-)

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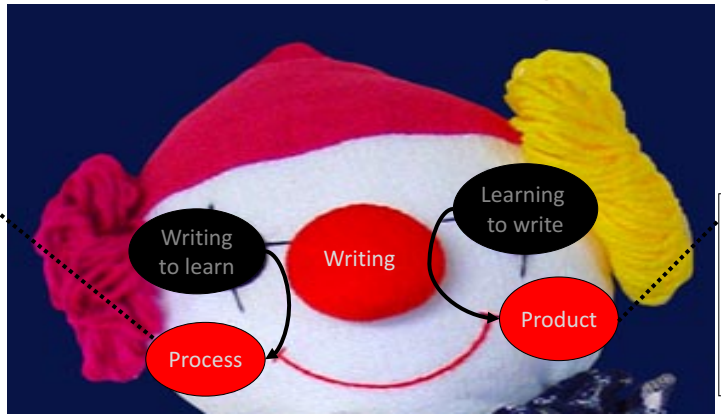
The clown of writing!

Studying:
(b)logs,
journals
notes,
wikis
e-mail



Reporting:
exams
reports
essays
posters
articles

Learning through writing – alignment to promote learning

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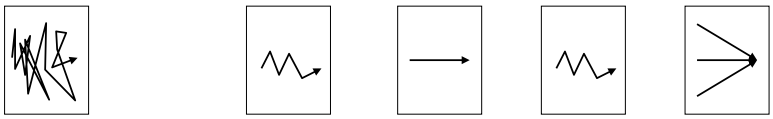
Levels of fiction!

Literature / Instructions → Case / Lab / project notes → (Case) report, assignment, Letter → Conference / oral presentation → Research article

Problem Method Activities Evaluation



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Working texts from ideas to presentation

'Speed writing' ⟶ *Elaborate* ⟶ *Revise*

- Timed
- Without stopping
- A start
- Generate ideas
- Replace 'inspiration'

- Add
- Cut
- Replace
- Clarify
- Elaborate
- Correct
- Move

- Focus
- Form/structure
- Phrasing
- Mechanics
- Proof reading

[Dysthe, Olga, Hertzberg Frøydis and Løkensgard Hoel, Torlaug. (2002) *Skriva för att lära*. Studentlitteratur, Lund]

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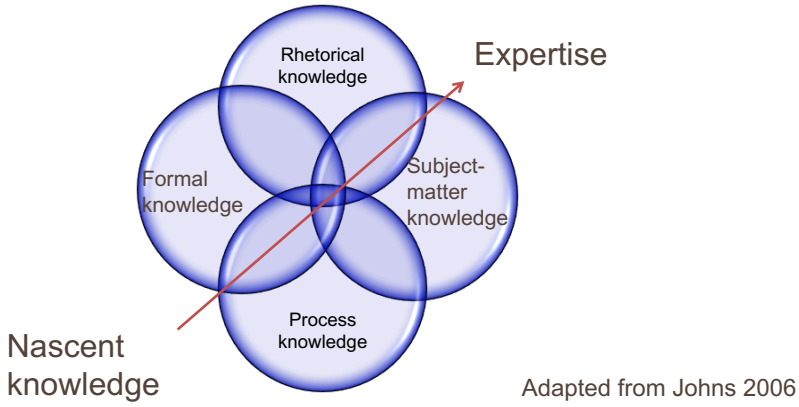
Writing expertise?



Adapted from Johns 2006

Writing expertise (L2) requires the development of genre knowledge
(Tardy, 2009)

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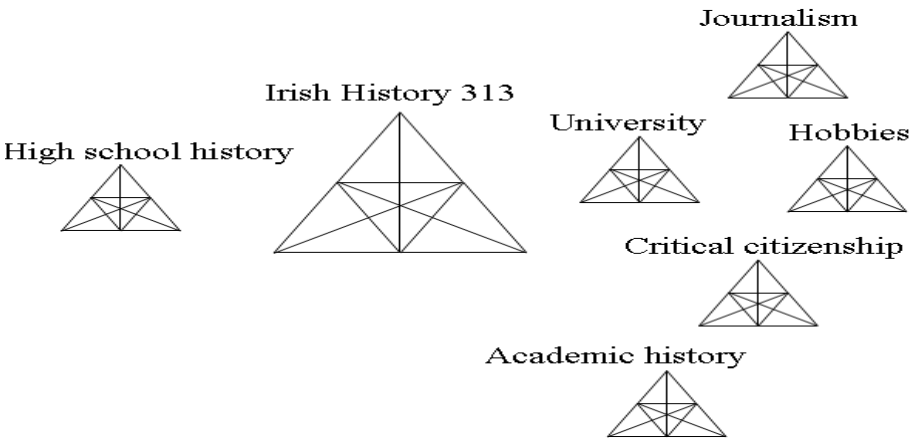
Activity theory: 'Beth' struggles!



Big Picture People Rarely Become Historians, Russell and Yañez.
Writing Selves/Writing Societies, Bazerman & Russell 2003
http://wac.colostate.edu/books/selves_societies/

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'Literacy' / 'proficiency' in activity systems

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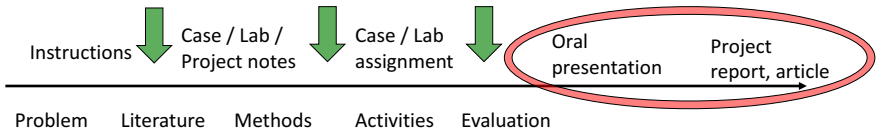
Writing in the making

Granted that we don't settle for a mere skills discourse, we need to be more deliberate in our use of writing throughout the learning process



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Fictional aspect of writing – the learning behind it

Conference presentation

- so we thought we had a nice picture of this molecule …
- they were forming a well-defined surface until we did some STM work with it.
- then our whole world fell apart for a while
- but in retrospect, we figured out more complicated than we previously thought

WTL, Process, Genre I, Activity system I

Research paper version

The α structure is relatively complex.

LTW, Process, Genre II, Activity system II

From: Ventola, Shalom, Thompson. *The Language of Conferencing*. Frankfurt, Peter Lang, 2002. 159.

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Research on feedback suggests …

Key quality	Justification, exemplification, elaboration
Understandable	Expressed in a language that students will understand
Selective	Too much might overwhelm
Specific	For instance with examples
Timely	In time for the next assignment
Contextualised	Framed by readers and ILOs
Non-judgmental	Descriptive not evaluative
Balanced	Address strengths too
Forward-looking	Next version or section
Transferable	Effective for processes and skills downstream
Personal	Refer back to what you already know about the author's strengths or weaknesses

Nicol. (2010) From monologue to dialogue: improving written feedback processes in mass higher education. Assessment & Evaluation in Higher Education Vol. 35, No. 5, August 2010, 501–517

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Feedback must be relevant (duh!)

Speed writing	Draft	Final version
Ideas, content, thoughts	Commenting form and focus	Coherence and logic
Direction	Outline	Phrasing and style
Generating more ideas and opportunities	Structure	*Mechanics*
Generate enthusiasm	Coherence and argument	*Correctness*
	Comprehension (explicative level)	
	Writer / reader strategies	

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Great exam construction: MSc Physics

- Use student generated quizzes in order increase student engagement with content matter
- Collect students' quiz questions for exam construction
- Much better grades and pass rates!

A success for the course!

- What really happened?
  - They removed the language component from the assessment design

We do EMI!

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Electrical power engineering (MSc): problems and measures

One course towards the end of year 1.

"Problems":
Reports too long
Imprecise data commentaries
Structure and flow not meeting expectations

Revised task description
Revised rubric
Rubric part of feedback process
Lecture on data commentary
Negotiating genre in context

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The challenge of going from lab practice to article format

Going from:

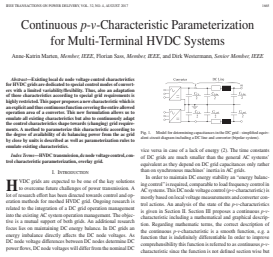
1. Task1
   - Run Ideal_sw2.asc and observe the switching waveforms. Identify the time periods for the four equivalent circuits used to describe the switching of a MOSFET.
   - Observe the Cgs and Cgd charging from the gate-drain and gate-source current plots.
2. Task 2.

Ideal_buck2.asc uses an ideal diode while Ideal_buck2_diode.asc includes a model of a diode that has similar rating as the one used in the Flyback converter.

   - Observe the current waveform in the diode in both cases and note the differences. What is the maximum voltage over the diode?
   - Run Ideal_buck2_diode_inductance.asc with added parasitic inductances and observe the voltage over the diode again. What is the reason for such a high voltage over the diode?
   - Design the snubber circuit that will reduce the voltage stress and observe the voltage over the diode again.
3. Task3
   - Observe the voltage at the drain of the MOSFET. What is the maximum voltage over the MOSFET?
   - How does the stray inductance influence Vd at turn-on and turn-off?
   - Design and implement turn-off and overvoltage snubbers and make comparison in terms of max overvoltage, switch and total losses?

to(wards):

IEEE Transactions of Power Dynamics



Continuous p-v-Characteristic Parameterization for Multi-Terminal HVDC Systems

Anne-Katrin Marten, *Member, IEEE*, Florian Sass, *Member, IEEE*, and Dirk Westermann, *Senior Member, IEEE*

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Quantum optics and quantum informatics (7,5 credits): Brief 4-year history

1. Took faculty course for EAP/WID-writing
2. Improved learning outcomes
3. Improved writing instructions
4. Added collective formative feedback
5. Added peer response
6. Added criteria, rubrics
7. Improved lab instructions

Any results?

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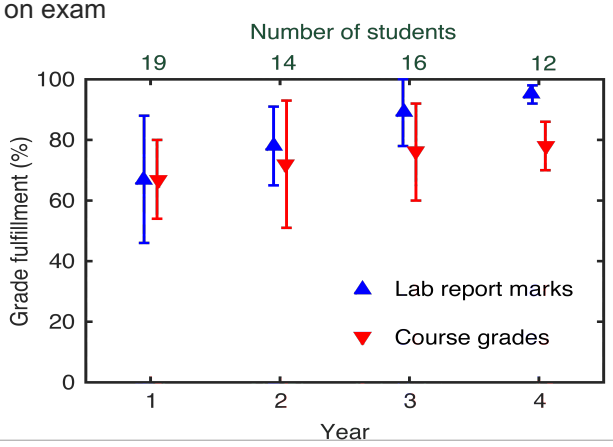
Impact of course re-design

- Better reports and less variation
- Higher grades on exam



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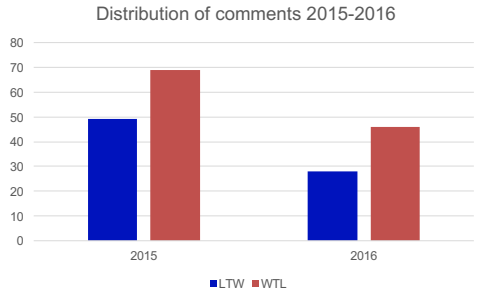
Understanding impact of course re-design

- With basic EAP/WID course re-design, lab reports naturally improve
  - Tracing the effect of the improved lab instructions?
  - Tracing peer comments, a lot more on content than we expected:



  - Requiring peer discussion seems crucial as peers corrected each other.

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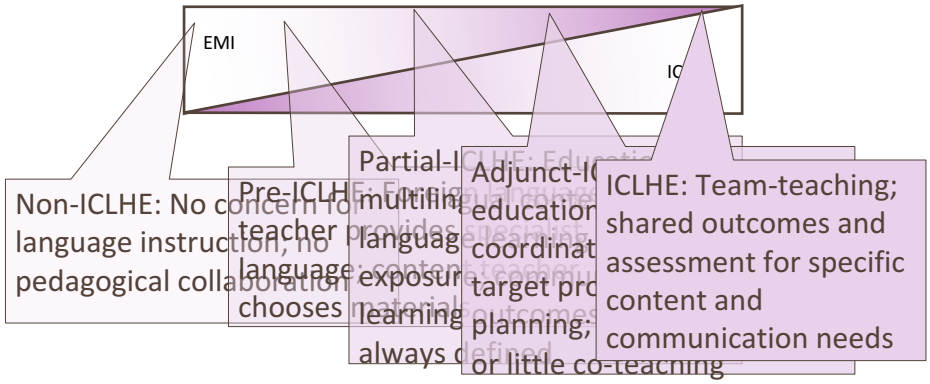
An EMI – ICLHE continuum



Cf. Anne Räsänen, 2010 LanQua project: Non-CLIL; Pre-CLIL; Partial CLIL; Adjunct; CLIL

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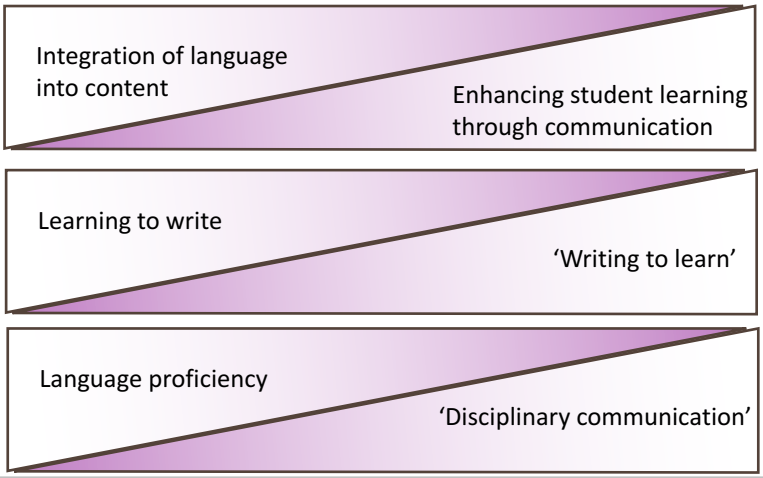
Rationale: Balancing priorities



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I'll shut up now … Thank you for staying!