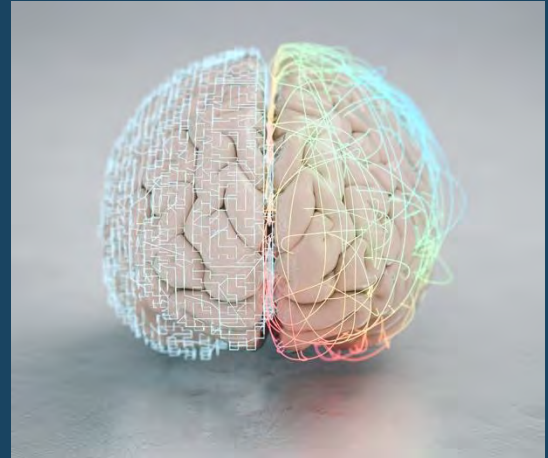# Learning to write in the era of AI
Hazards and possibilities

Raffaella Negretti

Chalmers University of Technology
Department of Communication and Learning in Science
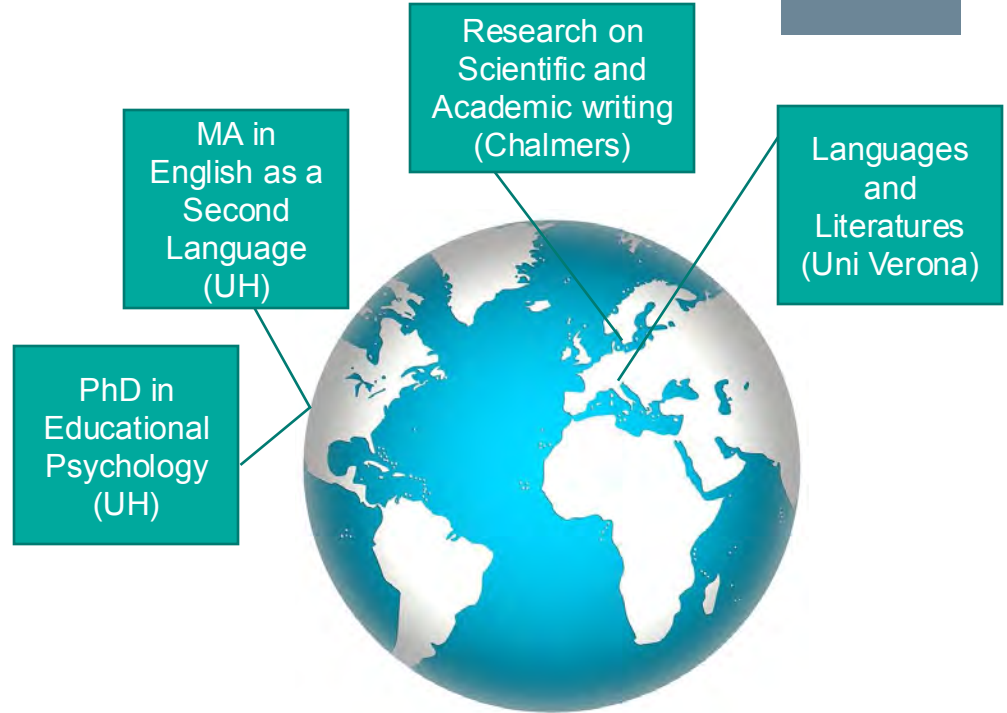negretti@chalmers.se

Who am I and what I do

- Prof. of Educational Psychology and Applied Linguistics

- Dept. Of Communication and Learning in Science

- Chalmers University of Technology

My journey

- Teaching in HE for 30 years

- Interdisciplinary research

- Interest in learning

- Interest in pedagogy

- Interest in writing

MA in English as a Second Language (UH)

Research on Scientific and Academic writing (Chalmers)

Languages and Literatures (Uni Verona)

PhD in Educational Psychology (UH)

My research: questions and theories

How do people **learn** to write?

Which learning processes foster writing expertise?

Which pedagogies are effective to promote learning to write?

English for Academic Purposes

Genre studies

L2 Writing

Metacognition and self-regulation

Hidden expectations: scaffolding subject specialists' genre knowledge of the assignments they set

Lisa McGrath[1] · Raffaella Negretti[2] · Karen Nicholls[1]

Metacognition in Student Academic Writing: A Longitudinal Study of Metacognitive Awareness and Its Relation to Task Perception, Self-Regulation, and Evaluation of Performance

Raffaella Negretti[1]

Calibrating Genre: Metacognitive Judgments and Rhetorical Effectiveness in Academic Writing by L2 Graduate Students

RAFFAELLA NEGRETTI
Stockholm University and Chalmers Technical University, Sweden
E-mail: negretti@chalmers.se

2024-10-16

Not an expert in AI, but ok with technology

Raffaella Negretti

INTERNET E LE LINGUE

*Manuale di navigazione per l'apprendimento on-line
dell'inglese, francese, tedesco e spagnolo*

http://www.lingua.world.http://www.language.world.
http://www.sprache.world.http://www.langue.world.
http://www.lengua   w.lingua.world.
http://www.langua   vww.sprache.world.
http://www.langue   w.lengua.world.
http://www.lingua.   w.language.world.
http://www.sprach   vww.langua.world.
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http://www.langue.world.http://www.lengua.world.

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PESCARA 1998

WEB-BASED ACTIVITIES AND SLA:
A CONVERSATION ANALYSIS RESEARCH APPROACH

Raffaella Negretti
Università di Verona

ABSTRACT

Different Internet technologies foster the acquisition of different language skills. In the case of synchronous interaction tools, such as Webchat, the concern is to evaluate whether and how this communication context affects the process of acquiring a second language. A collection of Webchat interaction data among English non-native speakers (NNS) and native speakers (NS) is the basis for a microanalytic investigation conducted form a Conversation Analysis (CA) perspective. The main purpose is to discover patterns and conversational strategies used by participants in this on-line context.

2024-10-16

Today: focus on learning to write, then (G)AI

- What is writing?

- How do people learn to write? (what is a good writer?)

- What are the hazards and possibilities that AI poses to learning to write?

Learning in the front, AI in the back

Learning

AI

What is writing?

What is writing and what does it do?

"Writing is a means of thinking and a means of action"

Halliday (1989)

Threshold concepts about writing:

- Writing is a **social and rhetorical** activity
- Writing is also <u>always</u> **a cognitive activity**

These overlap

- Writing speaks to situations through recognizable forms (genres)
- Writing enacts and creates identities and ideologies
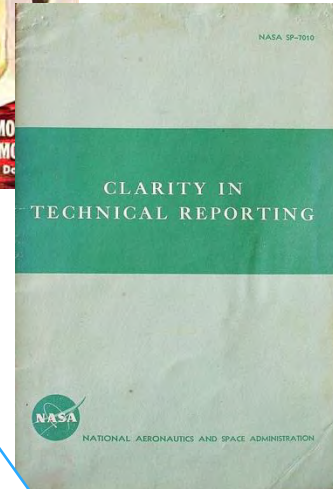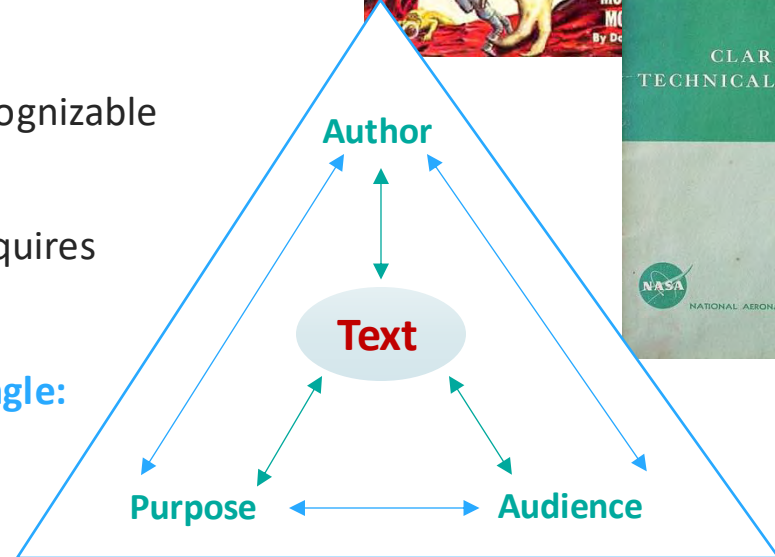- All writers have more to learn

(Adler-Kassner & Wardle, 2016)

Writing as action

A social and rhetorical activity

- Writing is an action by which **we make meaning for others**

- Is rhetorical **problem solving** (Flower & Hayes, 1980): we use it to persuade, inform, entertain, critique etc.

- **Genres** are recognizable forms of writing with recognizable **purposes** (and **audiences**)

- There is no general writing skill: each **situation** requires **invention and adaptation**

The rhetorical triangle:

Author

Text

Purpose ⟷ Audience

Headline Publications/Ed Emshwiller, Public domain, via Wikimedia Commons
TCO, CC0, via Wikimedia Commons

2024-10-16

Writing as thinking

A cognitive process and a means to learning

A mind at work!

- Writing helps to develop and communicate **abstract reasoning**

- Writing facilitates the **acquisition of new and complex knowledge**

- Writing allows people to **reflect and evaluate** what they know

- Writing helps people generate **new thinking** (a creative activity!)

Att skriva för hand har stor betydelse för människans kunskapsutveckling. Handens rörelser aktiverar hjärnan och forskning visar att skrivande för hand har effekt på våra läs-, skriv- och räknefärdigheter. Samtidigt som handskrift som metod påverkar inlärning, koncentration och uppmärksamhet bidrar den också till att stärka **självkänsla, självförtroende och motivation till lärande.**

https://sprakutvecklarna.wordpress.com/2023/07/04/att-skriva-for-hand-paverkar-kunskapsutveckling/

2024-10-16

How do we learn to write?
(And what is a good writer?)

Learning to write: transforming knowledge
(Bereiter & Scardamalia, 1987, 1993)

Learning to write: from **knowledge transmission** to **knowledge transformation**

Writing as Knowledge Transmission	Writing as Knowledge Transformation
Less creativity required. Ex: • Technical specifications • Professional reports • Instructions • Laboratory notes • Exam questions?	Creativity and problem solving required. Ex: • Essays • Research articles • Non-fiction • Course assignments?

A mind at work!

Note! Both require adaptation to audience and purpose

Writing expertise as flexibility

- **Knowledge transforming**

  Expert writers analyze problems, rework ideas, and achieve personal communicative goals. They can transform what they know and craft it into something new that makes sense for their readers. (Bereiter & Scardamalia, 1987)

- **Rhetorical problem solving**

  Expert writers can accurately envision and adapt to the purpose, expectations, and linguistic/formal requirements posed by the writing situation. They can also transfer and adapt their strategies across different rhetorical problems. (Flower & Hayes, 1980)

- **Applied metacognition**

  Expert writers are metacognitive and strategic: they consciously plan, monitor, and evaluate their strategies and their choices of content, style, and rhetorical structure, depending on the task and the developing text. (Hacker et al., 2009; 2018). They are authors.

Metacognition: What is it and why it matters

Why People Fail to Recognize Their Own Incompetence

David Dunning,[1] Kerri Johnson, Joyce Ehrlinger, and Justin Kruger

Department of Psychology, Cornell University, Ithaca, New York (D.D., K.J., and J.E.), and Department of Psychology, University of Illinois, Champaign-Urbana, Illinois (J.K.)

The "knowledge about and regulation of one's knowledge and thinking"
(Flavell, 1979; Brown, 1978)

"The source of self-knowing consciousness, and the crucial self-reflective function that allow us to have free will and to make self-determined choices"
(Metcalfe & Schwartz, 2016, p. 407)

Agency

- Reflect on what we know about something, about ourselves, and our competence

- Monitor what we do while doing it (including learning)

- Use this awareness to make decisions

- Evaluate what we have done and "learn a lesson"

Metacognition in writing

A young(er) Raffaella learning to write…

2024-10-16

When students gain metacognition...

(Negretti & McGrath, 2020)

I think I've learned a lot and (the course) improved my writing, but it has also made the task of writing much more difficult, because I need to be aware of more things. But at the same time, **I think it's good to be aware, than to be ignorant** about audience perception or what they can see into my writing ... **Previously I could just write anything, but I didn't really know how to write ... Now I know how tall the mountain is. Previously I just went on hiking...**

Implications for teaching

For those of us who teach writing, the objective is not just to have our students produce effective writing-that is, to respond in logical and thoughtful ways to the question posed. **We also want our students to demonstrate consciousness of process that will enable them to reproduce success. Metacognition is not cognition.** Performance, however thoughtful, is not the same as awareness of how that performance came to be.

Tinberg, in Adler-Kassner & Wardle (2016, p. 75)

A mind at work!

Learning is more than cognition:
The theory of Self-Regulated Learning (SRL)

"The process whereby learners personally activate and sustain cognitions, affects, and behaviors that are systematically oriented toward the attainment of learning goals"

(Zimmerman & Schunk, 2011, p.1)

Learning means:

- Regulation of affective dimensions (emotions, motivation)

- Regulation of behaviour (what I do and how)

- Ability to set intermediate goals and adapt strategies accordinlgy

Performance phase
Self-control
Task strategies, self-instruction, image-ry, time management, environmental structuring, help-seeking, interest in-centives & self-consequences

Self-observation
Metacognitive monitoring & self-recording

Forethought phase
Task analysis
Goal setting
Strategic planning

Self-motivation beliefs
Self-efficacy
Outcome expectations
Task interest/value
Goal orientation

Self-reflection phase
Self-judgment
Self-evaluation
Causal attribution
Self-reaction
Self-satisfaction/affect
Adaptive/defensive

Figure 1. Phases and processes of self-regulation according to Zimmerman and Moylan (2009). © Routledge.

SRL in writing: not a solitary endeavor

SRSD: Self-regulated Strategy Development (Karen Harris & Steve Graham)

https://srsdonline.org/explore-srsd/

- A teaching approach that focuses on **strategies** for writing

- SRSD improves writing performance and **knowledge about writing in children**

- **Planning** is a key dimension of **skilled writing**

- **Peer support** improves the effects of a SRSD approach

American Educational Research Journal
Summer 2006, Vol. 43, No. 2, pp. 295–340

Improving the Writing, Knowledge, and Motivation of Struggling Young Writers: Effects of Self-Regulated Strategy Development With and Without Peer Support

Karen R. Harris and Steve Graham
Vanderbilt University

Article

Policy Insights from the Behavioral and Brain Sciences
1–8
© The Author(s) 2016
DOI: 10.1177/2372732215624216
bbs.sagepub.com
**$SAGE

Self-Regulated Strategy Development in Writing: Policy Implications of an Evidence-Based Practice

Karen R. Harris[1] and Steve Graham[1]

Participatory appropriation as a pathway to self-regulation in academic writing: The case of three BA essay writers in literature

Raffaella Negretti° & Špela Mežek*

° Chalmers University of Technology | Sweden
* Linnæus University | Sweden

journal of **WRITING RESEARCH**

Negretti, R. & Mežek, Š. (2019). Participatory appropriation as a pathway to self-regulation in academic writing: The case of three BA essay writers in literature. *Journal of Writing Research*, 11(1), p. 1-40. https://doi.org/10.17239/jowr-2019.11.01.01

Eva Lindgren
2022
Skrivdidaktik i grundskolan
Lund: Studentlitteratur AB 2022

What have I learned in my research?

Negretti (2012, 2017, 2021), Negretti & McGrath (2018, 2020; 2022), Negretti & Mežek (2019)
Negretti et al. (2023, 2022)

Metacognition helps learners to:

- ☺ **Make accurate judgments** about the quality of their writing

- ☺ **Apply** what they know about writing in a deliberate, authorial way

- ☺ **Understand** how to adapt their texts to the readers and the purpose

But:
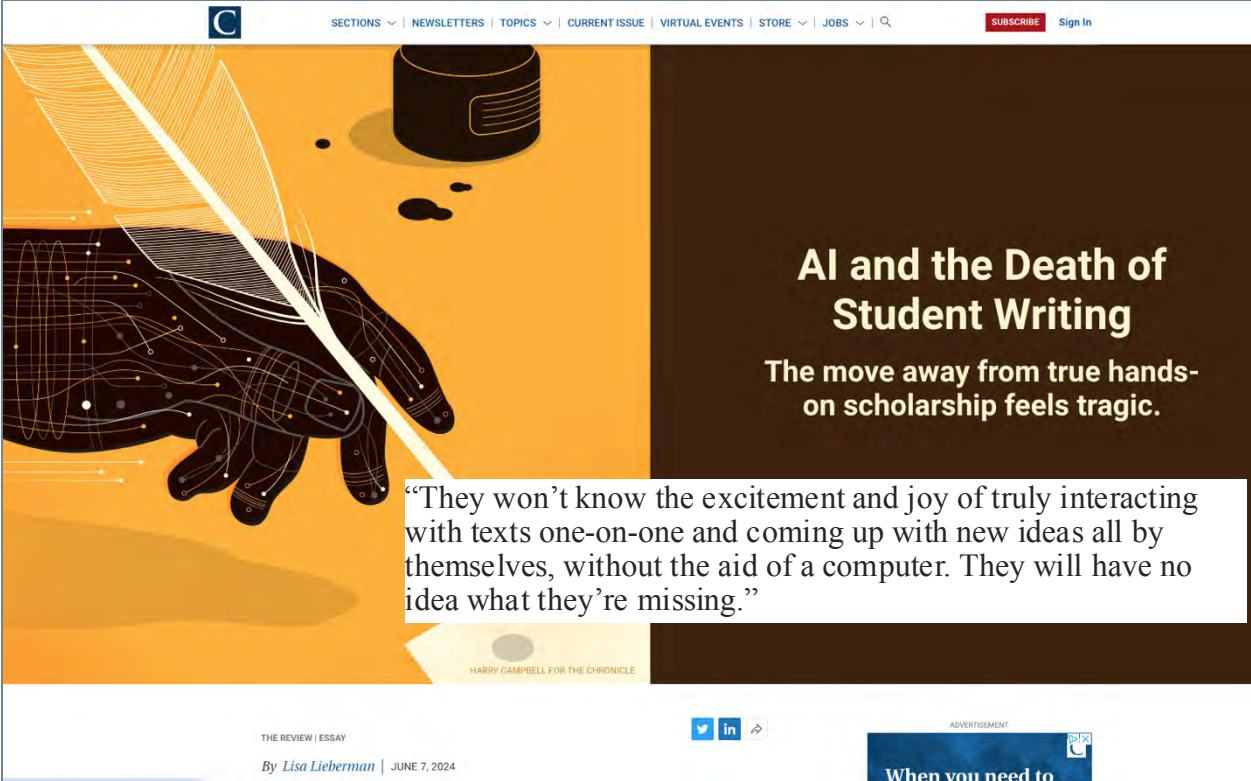
- ☹ Students can make **inaccurate** metacognitive **judgements** about their writing

- ☹ Students need **practice and help** to develop an **authorial perspective** (making decisions)

- ☹ Students often **do not have the right tools (strategies)** to regulate their writing and adapt it to different readers/situations

Learning to write in the era of GAI
Hazards and possibilities

GAI: Death of student writing, or?

Screenshot of The Chronicle article:

AI and the Death of Student Writing

The move away from true hands-on scholarship feels tragic.

"They won't know the excitement and joy of truly interacting with texts one-on-one and coming up with new ideas all by themselves, without the aid of a computer. They will have no idea what they're missing."

HARRY CAMPBELL FOR THE CHRONICLE

THE REVIEW | ESSAY

By Lisa Lieberman | JUNE 7, 2024
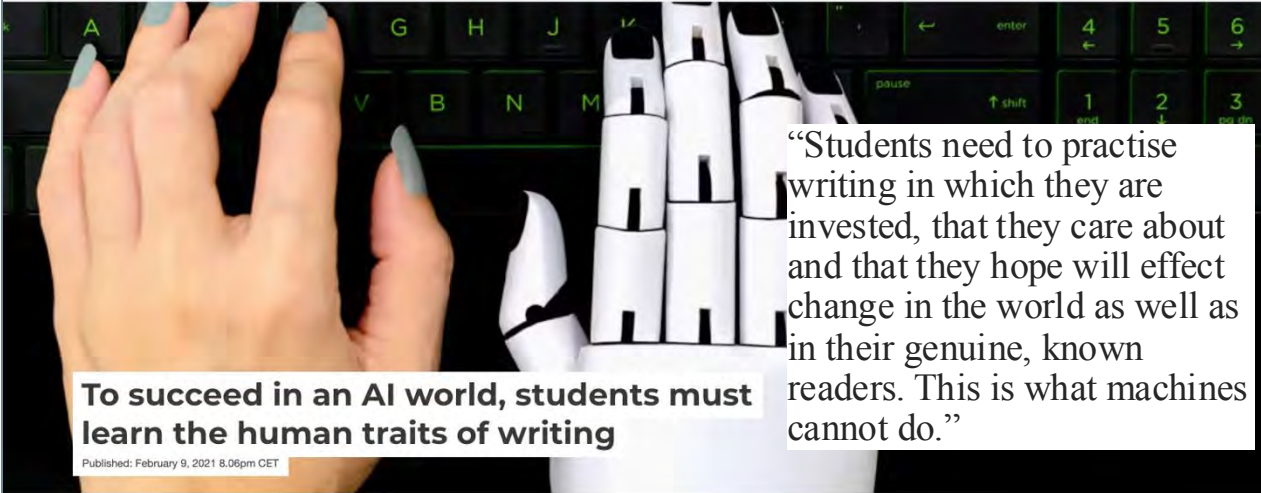
- Students cannot use the words in their essays

- Students can't talk about their essays

- AI tools such as Grammarly are offered by schools

- GAI produces good writing

Writing as a product for assessment

https://www.chronicle.com/article/ai-and-the-death-of-student-writing

GAI improves students writing, or?

THE CONVERSATION
Academic rigour, journalistic flair

Q Search analysis, research, academics...

To succeed in an AI world, students must learn the human traits of writing

Published: February 9, 2021 8.06pm CET

Shutterstock

"Students need to practise writing in which they are invested, that they care about and that they hope will effect change in the world as well as in their genuine, known readers. This is what machines cannot do."

Email
X X (Twitter) 58
Facebook 1.4k
LinkedIn

Students across Australia have started the new school year using pencils, pens and keyboards to learn to write.

In workplaces, machines are also learning to write, so effectively that within a few

Author

Lucinda McKnight
Senior Lecturer in Pedagogy and Curriculum, Deakin University

- "Template" writing assignments can be done (and marked) by AI

- Literacy increasingly means and includes **interacting** with and **critically evaluating** AI.

- Co-creativity with AI can foster learning to write

- **Robots have voice but no soul**

Writing as decision making process, metacogntive and creative:

"Thinking about the Reader's mind" (Negretti, 2021)

A mind at work!

Is GAI good at writing?

Two Lay Abstracts

Courtesy of:

Christine Feak
University of Michigan

- One produced by ChatGPT
- One written by the authors
- Which is which?

Original abstract of a research paper

Abstract

Major impact events have shaped the Earth as we know it. The Late Heavy Bombardment is of particular interest because it immediately precedes the first evidence of life. The reentry of impact ejecta creates numerous chemical by-products, including biotic precursors such as HCN. This work examines the production of HCN during the Late Heavy Bombardment in more detail. We stochastically simulate the range of impacts on the early Earth and use models developed from existing studies to predict the corresponding ejecta properties. Using multiphase flow methods and finite-rate equilibrium chemistry, we then find the HCN production due to the resulting atmospheric heating. We use Direct Simulation Monte Carlo to develop a correction factor to account for increased yields due to thermochemical nonequilibrium. We then model 1-D atmospheric turbulent diffusion to find the time accurate transport of HCN to lower altitudes and ultimately surface water. Existing works estimate the necessary HCN molarity threshold to promote polymerization that is 0.01 M. For a mixing depth of 100 m, we find that the Late Heavy Bombardment will produce at least one impact event above this threshold with probability 24.1% for an oxidized atmosphere and 56.3% for a partially reduced atmosphere. For a mixing depth of 10 m, the probability is 79.5% for an oxidized atmosphere and 96.9% for a partially reduced atmosphere. Therefore, Late Heavy Bombardment impact ejecta is likely an HCN source sufficient for polymerization in shallow bodies of water, particularly if the atmosphere were in a partially reduced state.

How quickly do you get lost in this text? What is it about?   **What is the story here?**

Plain Language Summary   [1]Throughout Earth's history, major impact events have played a crucial role in shaping our planet. [2]One intriguing period is known as the Late Heavy Bombardment, which happened just before the earliest signs of life. [3]When objects from space collided with Earth, the material they threw up into the atmosphere created a variety of chemicals, including some important for life, like HCN.

[4]In this study, we wanted to understand in more detail how much HCN was produced during the Late Heavy Bombardment. [5]To do this, we used computer simulations to recreate the range of impacts that occurred back then. [6]By building on previous research, we developed models to predict the properties of the material thrown out by these impacts.

[7]We were particularly interested in HCN, which is a precursor to the building blocks of life. [8]To estimate the amount of HCN generated, we used advanced techniques that consider how different substances interact and flow under the extreme conditions caused by these impacts.

[9]To make our estimates more accurate, we used a special method called Direct Simulation Monte Carlo. [10]This helped us factor in the additional HCN produced due to the intense heat and chemical reactions happening during the impacts.

[11]Next, we studied how HCN moved through the atmosphere and eventually reached lower areas, including bodies of water. [12]To do this, we created a simplified model to understand how HCN was transported downwards over time.

[13]Scientists have previously determined that a specific concentration of HCN, known as the molarity threshold, is needed for the formation of complex molecules. [14]Our findings showed that during the Late Heavy Bombardment, there was a considerable chance of at least one impact event exceeding this threshold. [15]This was especially true if the atmosphere had less oxygen compared to today. [16]The probability varied depending on the depth of the water, with shallower bodies having a higher likelihood.

[17]In conclusion, the impact events of the Late Heavy Bombardment likely served as a significant source of HCN, which could have contributed to the formation of complex molecules in shallow bodies of water. [18]This is particularly true if the atmosphere had less oxygen during that time.

355 words

Plain Language Summary [1]Asteroid impacts have shaped the Earth as we know it. [2]Large impacts produce debris that spreads outward and covers the globe, resulting in widespread chemical reactions in the upper atmosphere. [3]Early in Earth's history, such large impacts were much more common. [4]Since the first evidence of life immediately follows a drop in the rate of large impacts, it begs the question whether chemicals produced by these impacts could result in the formation of biological compounds. [5]Formation of the chemical hydrogen cyanide is particularly interesting, due to its ability to form many key biological compounds when concentrated in water alongside another chemical, phosphates. [6]In this work, we present an improved model for predicting the amount of chemical species produced by large impacts. [7]By simulating multiple possible scenarios for the impacts on the early Earth, we find the likelihood of producing biological compounds in large quantities. [8]We find that sufficient hydrogen cyanide would be produced in shallow surface water with an 80% or higher probability, depending on the atmosphere at the time. [9]We conclude that given the presence of phosphates in surface water, this mechanism is a plausible way to produce significant biological compounds and a potential origin point for life on Earth.

201 words

GAI writing: no "mind at work"

Plain Language Summary [1]**Throughout Earth's history, major impact events have played a crucial role in shaping our planet.** [2]One **intriguing** period is known as the Late Heavy Bombardment, which happened just before the earliest signs of life. [3]When objects from space collided with Earth, the material they **threw up** into the atmosphere created a variety of chemicals, including some important for life, **like HCN.** [4]In this study, we wanted to understand in more detail how much HCN was produced during the Late Heavy Bombardment. [5]To do this, we used computer simulations to recreate the range of impacts that occurred back then. [6]By building on previous research, we developed models to predict the properties of the material thrown out by these impacts. [7]We were particularly interested in HCN, which is a precursor to the building blocks of life. [8]To estimate the amount of HCN generated, we used advanced techniques that consider how different substances interact and flow under the extreme conditions caused by these impacts. [9]To make our estimates more accurate, we used a special method called Direct Simulation Monte Carlo. [10]This helped us factor in the additional HCN produced due to the intense heat and chemical reactions happening during the impacts. [11]Next, we studied how HCN ... eventually reached lower areas, including ... a simplified model to understand how ... time. [13]Scientists have previously deter... HCN, known as the molarity threshold, is nee... cules. [14]Our findings showed that during the L... onsiderable chance of at least one impact... was especially true if the atmosphere had ... robability varied depending on the depth of ... a higher likelihood. [17]In conclusion, the i... rdment likely served as a significant source... to the formation of complex molecules... is particularly true if the atmosphere had less oxygen during that time.

No Mind at work!

Plain Language Summary [1]**Asteroid impacts have shaped the Earth as we know it.** [2]Large impacts **produce debris** that spreads outward and covers the globe, resulting in widespread **chemical reactions** in the upper atmosphere. [3]Early in Earth's history, such large impacts were much more common. [4]Since the first evidence of life immediately follows a drop in the rate of large impacts, it begs the question whether chemicals produced by these impacts could result in the formation of biological compounds. [5]Formation of the chemical hydrogen cyanide is particularly interesting, due to its ability to form many key biological compounds when concentrated in water alongside another chemical, phosphates. [6]In this work, we present an improved model for predicting the amount of chemical species produced by large impacts. [7]By simulating multi... mpacts on the early Earth, we find t... ical compounds in large quantities... n cyanide would be produced in sha... r higher probability, dep... time. [9]We conclude that gi... n surface water, this mechanism... nificant biological compounds and ... n Earth.

A Mind at work!

2024-10-16

Teaching writing with GAI

As teachers, we sit on key expertise about writing: let's trust it!

☹ Hazards: Loss of learning
- Lack of development of a writer identity
- Lack of development of writing strategies
- No creative mind at work
- Insecurity
- Big no-no with younger writers

☹ Bias and sustainability

☺ Possibilities: Scaffolding learning
- AI can be used to trigger metacognition: does it work? What would work better? Why?
- Reformulation for different audiences
- Feedback and interaction to support for SRL

☺ Critical thinking

Principles for good task design

(Swales & Feak, 2023)

Table 2
Four key characteristics of effective writing tasks for advanced levels of EAP.

Well-designed EAP writing tasks	Some specific characteristics
Are sensitive to content in that they	• focus on content that taps into some facet of instructors' and students' background knowledge and/or • provide students something interesting to work with and/or
Are "relatable" in that they	• align with writing required in actual academic or professional communicative situations and/or • point to other genres or writing situations to which the intended learning outcomes of the task apply
Lead students to a "new place" by	• enhancing linguistic awareness and/or • "raising rhetorical consciousness" and/or • helping students to see choices that can be made, leading to autonomy
Engage students by	• biasing for success and/or • promoting analytical thinking and/or • providing opportunities to make meaning

https://doi.org/10.1016/j.jslw.2023.101017

Translated to writing pedagogy:

As teachers, we can minimize AI hazards and enhance possibilities if:

Contextualize writing in our teaching
- Discuss the who, how and why of a text
- Discuss expectations and purposes tied to a genre

Promote thinking as an author
- Scaffold students in making conscious choices and decisions about their texts
- Use writing for formative assessment (process rather than product)

Promote metacognition and SRL in learners
- Encourage learners to set their own goals and make plans for their text
- Encourage reflection and feedback
- Help them sustain effort through dialogue

Task examples
- Reflections on revisions and decisions taken in the process (writing diaries?) → Challenges? Lessons learned? Questions for teacher?
- Reformulations of a text in groups or individually for different readers: what is the thinking behind the writing?
- Concept maps of texts with reflection (in groups or individual): what do we need to know?
- Genre play: "how would you write this information as a…. Letter to a friend/short story/journalistic report/textbook"

AI for Reformulation and Interaction

Reformulation (Swales, 1990)

Is the re-writing and rephrasing of a text in different words, followed by a discussion of the effect of these reformulations. **The value of this task lies in the discussion/reflection of what motivates different linguistic choices rather than the reformulation** *per se*

Tasks where:

- Students use AI to explore alternative versions of a short text, and then discuss and evaluate the options (language, content, register etc.)

- Interaction with AI is used critically for feedback: AI as reader and coach that asks questions for the author (older writers).

- Human vs. machine contests (followed by discussion) to highlight students' own authorial voice and preferences (e.g. https://www.coolcatteacher.com/experiment-ai-or-hi-what-writes-the-best-paper/)
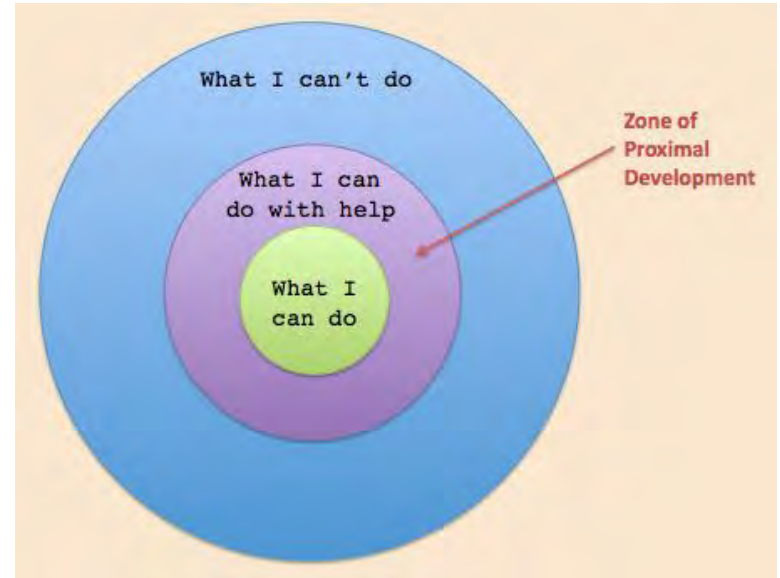
Creativity and co-creativity (with machines, Uitdenbogerd, 2020) should be fostered. Machines are trained on a finite amount of data, to predict and replicate, not to innovate in meaningful and deliberate ways. (Lucinda McKnight)

Example: Micro-curriculum for Critical AI Literacy

With Amy Wanyu Ou, Baraa Khuder, and Sindjia Franzetti
CLS Department at Chalmers

Aims:

1. Apply **SRL theory** to facilitate students' AI-mediated academic writing

2. Developing a series of tasks for **Critical AI Literacy (CAIL)**

3. Explore whether the tasks are effectively promoting CAIL
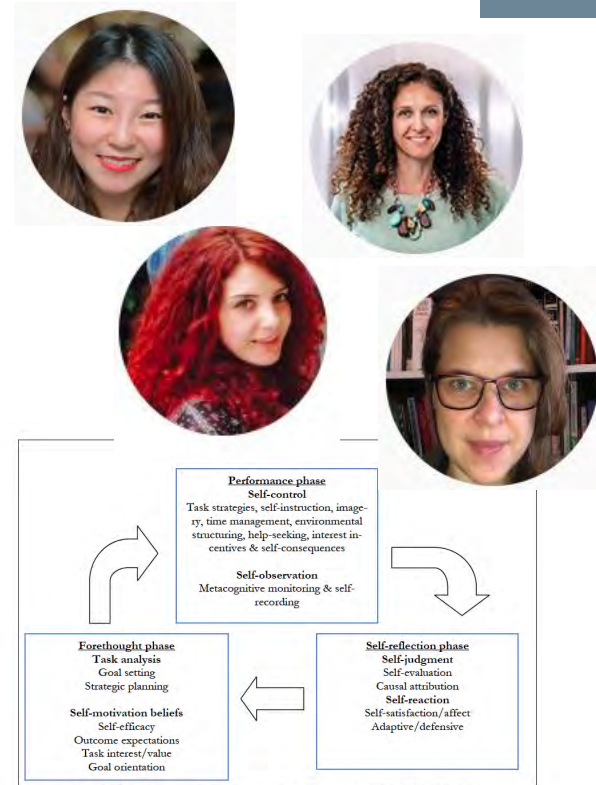
(Upcoming research paper)

Figure 1. Phases and processes of self-regulation according to Zimmerman and Moylan (2009). © Routledge.

Activity 1 – Forethrought

G. Critical AI literacy

Critical AI literacy refers to the ability to critically use available AI tools in the different stages of the research process. This involves both the ability to effectively engage with the tools, as well as the awareness of their limitations and the ethical considerations surrounding them.

1. I am familiar with using AI tools in the different stages of the research process (such as reading and editing).

1	2	3	4	5
Never true	Usually not true	Somewhat true	Usually true	Always true

2. I am actively considering the limitations, potential biases, and ethical considerations (such as data privacy and fairness) when incorporating AI tools into my research
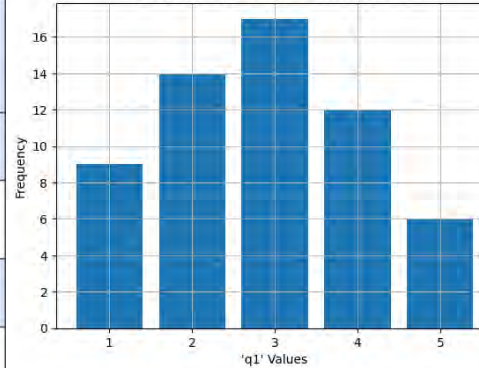
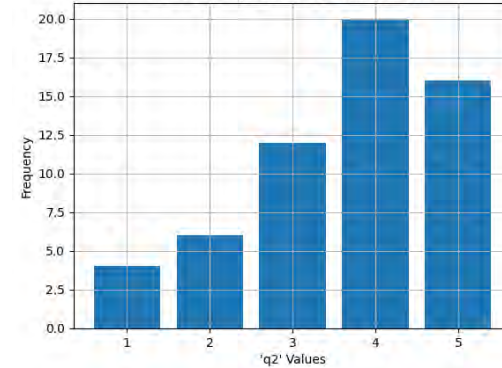| 1	2	3	4	5
Never true	Usually not true	Somewhat true	Usually true	Always true

Comments:

Resources on Canvas:
- Critical AI Literacy

Bar Plot of 'q1' Values and Frequencies

Bar Plot of 'q2' Values and Frequencies

"I feel it is a form of plagiarism."

The rapid development of various tools makes it difficult to know what tools to use and for what purposes.

"I prefer to do specific reading on my own as I do not think the risk of using AI tools in research that I submit to publication 'worth it'. Further, reading papers is for my own development so I don't see the point in using AI tools to help me further along in something I should be learning on my own."

Activity 2 – Performance Control

Try 1-2 prompts on ChatGPT to improve the pomodoro text. Revise prompts based on the effectiveness of the output.

(15 mins)

This Photo by Unknown Author is licensed under CC BY-SA

Prompt 1: Hej, can you revise this text?

Prompt 2: Can you put it in a more academic way?

Prompt 3: I like it! What if you shorten it a little bit?

Prompt 1: Hi! I need to make this text more coherent and clear

Prompt 2: I want to include this text in a scientific paper. Can you polish it and make it look more technical please?

Prompt 3: Can you use 10% fewer technical words?

Prompt 1: Can you help to make this text more coherent and clear?

Prompt 2: Can you make conclusion of the text?

Prompt: Check the coherence of the text. Mark sentences which stay out and do not have a logical connection to the prior sentence.

Activity 3 – Evaluation and Self-reflection

Group discussion (25 mins):

(1) Did the prompts yield satisfactory results?
(2) How to evaluate the ethical implications of the prompts you used?

"I believe prompting is a huge downside when it comes to generative AI. The **quality of responses** is entirely up to **how well thought-out a prompt is**."

Testing AI "presented a unique and insightful experience. The AI, in this case, ChatGPT, served as a **collaborative tool**."

"I really liked the idea of asking AI to **criticize the text as a reader** instead of asking it to create a text."

Writing portfolio assignment:

Document the human-AI interaction and peer discussion, reflect on the use of AI and the learning experience

- **Students indentified several limitations :**
  - Misinterpreting the author's message
  - Plagiarism/authorial credit
  - Voice not right, disciplinary register not right

- **Students identified potential benefits:**
  - Grammar correction with the right prompts
  - Language learning (vocabulary, style, syntax)

- **Key strategy for effective use:**
- Prompt formulation
- Sequencing of prompts

- Overall, students reported **gaining an awareness of ethical issues connected to the use of AI,** specifically for writing and publication.

Mapping Critical GAI Literacy (C-GAI-L)

Dimensions of C-GAI-L		Description
Interaction with GAI	Knowledge	• different GAI tools and their appropriate use contexts • interaction strategies with GAI that emphasise the writer agency
	Skills	• critically evaluate GAI results and integrate own knowledge to create solutions • develop effective prompting methods (e.g., iteration refinement)
GAI ethics in academic writing	Knowledge	• major ethical issues of GAI (e.g., automation bias, data privacy, consequences on human and environment) • policies and perspectives about GAI usage in academic writing (e.g., university regulations, publication policies, research ethics, GAI and ownership of text) • Awareness of the sociolinguistic impact of GAI tools on academic language and the writer
	Skills	• problematise GAI ethical issues and make informed decisions about their writing • critically reflect on broader sociotechnical realties and take social responsibilities
Technical value and limitations of GAI	Knowledge	• how GAI is developed, how it works, its applicability potential and limitations
	Skills	• critically evaluate GAI functions and usefulness in research processes and writing • problem-solve for situations due to GAI limitations
Self-learning	Knowledge	• metacognitive awareness of own communicative goals and disciplinary communities and expectations • Understanding of their development in critical GAI literacy.
	Skills	• have open-mindedness and a disposition of self-educating • self-regulate (set goals, monitor, and evaluate) when writing with GAI

In conclusion

GAI tools **can** scaffold learning to write, but:

- Students need to develop **critical AI literacy:**
  - How to interact with GAI
  - GAI ethics – in general and in academic writing
  - Technical value and limitations of GAI
  - Self-learning – if, how and why it helps them learn

- Learning to write requires the development of metacognition: **a mind at work**

- Writing tasks with GAI should be designed to **avoid loss of learning.** (avoid with with younger writers)

- It comes with a **cost**: social, ethical, and environmental, which our students should be aware of https://universitetslararen.se/2024/06/10/universitetens-ai-integrering-ar-inte-hallbar/

DEBATT

Universitetens AI-integrering är inte hållbar

Universiteten står i startgroparna för att integrera AI i undervisning och forskning, men utan att låtsas om elefanten i rummet. Konsekvenserna för människa och miljö är något som inte diskuteras, menar idéhistorikerna Kristian Petrov och Patrik Möller.

10 juni, 2024

TEXT: Kristian Petrov, Patrik Möller

"According to me, **an intellectual** is anyone who is **creatively producing new knowledge**. A peasant who understands that a new kind of graft can produce a new species of apples has at that moment produced an intellectual activity. Whereas the professor of philosophy who all his life repeats the same lecture on Heidegger doesn't amount to an intellectual. **Critical creativity**—criticizing what we are doing or inventing better ways of doing it—is the only mark of the intellectual function."

Umberto Eco, interview in *Paris Review*
(Zanganeh, 2008)

References

Adler-Kassner, L., & Wardle, E. (Eds.). (2015). Naming What We Know: Threshold Concepts of Writing Studies. https://doi.org/10.7330/9780874219906

Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition*. Mahwah, NJ: Erlbaum.

Bereiter, C., & Scardamalia, M. (1993). Surpassing ourselves. An inquiry into the nature and implications of expertise. Chicago: Open Court.

Brown, A. L. (1978). Knowing when, where, and how to remember: A problem of metacognition. In R. Glaser (Ed.), Advances in instructional psychology, Vol. 1 (pp. 77−165). Hillsdale: Erlbaum.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. American psychologist, 34(10), 906.

Flower, L., & Hayes, J. R. (1980). The cognition of discovery: Defining a rhetorical problem. *College composition and communication, 31*, 21−32.

Hacker, D. J. (2018): A Metacognitive model of writing: An update from a developmental perspective. Educational Psychologist, 53(4), 220-237.

Hacker, D. J., Keener, M. C., & Kircher J. C. (2009). Writing is applied metacognition. In D. J. Hacker, J. Dunlosky, A. C. Graesser (Eds.), *Handbook of metacognition in education* (pp. 154−172). New York, NY: Routledge.

Metcalfe & Schwartz (2016). The ghost in the machine: Self-reflective consciousness and the neuroscience of metacognition (pp. 407-24). *Oxford handbook of metamemory*.

Negretti, R. (2021). Searching for metacognitive generalities: Areas of convergence in learning to write for publication across doctoral students in science and engineering. *Written Communication, 38*(2), 167-207. https://doi.org/10.1177/0741088320984796

Negretti, R. (2017). Calibrating genre: Metacognitive judgments and rhetorical effectiveness in academic writing by L2 graduate students. *Applied Linguistics, 38*(4), 512-539. First published online Oct. 29, 2015. http://dx.doi.org/10.1093/applin/amv051

Negretti, R. (2012). Metacognition in student academic writing: A longitudinal study of metacognitive awareness and its relation to task perception and evaluation of performance. *Written Communication, 29*(2), 142-179.

Negretti, R., & McGrath, L. (2022). Setting the stage(s) for English for Research and Publication Purposes: authors, audiences, and learning the craft. Revista Ibérica, Journal of the European Association for Languages for Specific Purposes, 43, 7-26. https://doi.org/10.17398/2340-2784.43.13.7

Negretti, R., & McGrath, L. (2020). English for specific playfulness? How doctoral students in Science, Technology, Engineering and Mathematics manipulate genre. *English for Specific Purposes, 60*(Oct.), 26-39. https://doi.org/10.1016/j.esp.2020.04.004

Negretti, R., & McGrath, L. (2018). Scaffolding genre knowledge and metacognition: insights from an L2 doctoral research writing course. *Journal of Second Language Writing, 40*(June), 12-31. https://doi.org/10.1016/j.jslw.2017.12.002

Negretti, R., & Mežek, S. (2019). Participatory appropriation as a pathway to self-regulation in academic writing: The case of three BA essay writers in literature. *Journal of Writing Research 11*(1), 1-40. doi: 10.17239/jowr-2019.11.01.01

Negretti, R., Sjöberg-Hawke, C., Persson, M., Cervin-Ellqvist, M. (2023). Thinking outside the box: senior scientists' metacognitive strategy knowledge (MSK) and self-regulation of writing for science communication. *Journal of Writing Research, 15*(2), 333-361. https://doi.org/10.17239/jowr-2023.15.02.04

Negretti, R., Persson, M., & Sjöberg-Hawke, C., (2022). Science stories: Researchers' experiences of writing science communication and the implications for training future scientists. Published online April 15 2022. *International Journal of Science Education – Part B, communication and public engagement, 12*(3), 203-220 https://doi.org/10.1080/21548455.2022.2060530

Swales, J. M., & Feak, C. B. (2023). Task evolution in English for Academic Purposes writing materials: The case of "Information Transfer" to "Critical Commentary." *Journal of Second Language Writing, 61*. https://doi.org/10.1016/j.jslw.2023.101017

Swales, J. M. 1990. *Genre Analysis: English in Academic and Research Settings*. CUP.

Swales, J. M. and C. B. Feak. (2012). *Academic Writing for Graduate Students*. Michigan University Press

Uitdenbogerd, A. L. (2020). Can robots write? Machine learning produces dazzling results, but some assembly is still required. *The Conversation*. https://theconversation.com/can-robots-write-machine-learning-produces-dazzling-results-but-some-assembly-is-still-required-146090

Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. Educational Psychologist, 48(3), 135−147.

Zimmerman, B, & Schunk, D. H. (Eds.). Handbook of self-regulation of learning and performance. New York, NY: Routledge.