

Multilingual writer awareness at the university level – combining pedagogical and research methods

Research Methodologies in European Modern Languages and
Literatures

Maarit Mutta

Monday, 23.2.2026

12-14 (Finnish time)

Themes of today's session

Writing as a cognitive process

Writer awareness

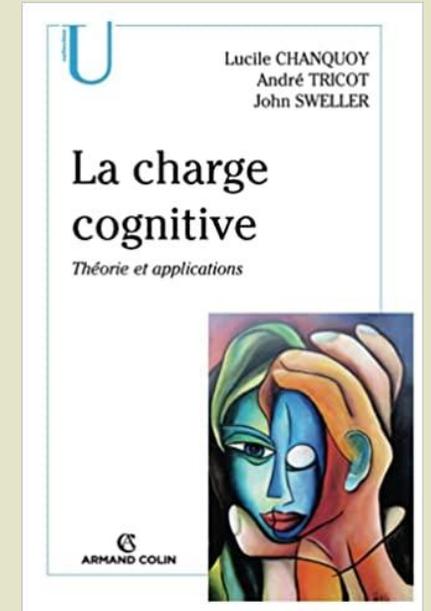
Writing processes and writer profiles

Pedagogical experiment

AI, ChatGPT and ethical issues

Writing and speaking

- Processing of cognitive information of a human being (Chanquoy, Tricot & Sweller 2007)
 - Biologically primary knowledge:
 - Listening and speaking
 - Socialization through interaction
 - Learning to use problem solving strategies
 - Biologically secondary knowledge:
 - Reading and writing



All cognitive (= linguistic processes) interact



L1:

- Listening
- Speaking
- Reading
- Writing



Hand writing vs. typing on a computer

Conférence Éducation
Apprendre à Apprendre:
de l'écrit dans l'apprentissage de la langue
avec
Michel Fayol

The poster features a large blue silhouette of a human head in profile, facing right. Below the text are five logos: the Finnish Academy of Science and Letters, the Académie Française, Institut Français Finlande, the French Republic, and the University of Clermont-Ferrand. A small photo of Michel Fayol is visible on the right side of the poster.

Professor Michel Fayol



Professor Michel Fayol ([website](#)) – to be confirmed
Blaise Pascal University at Clermont-Ferrand

Michel Fayol obtained his PhD in Psychology at the University of Bordeaux in 1976. He has been Assistant Professor at the University of Montpellier in 1977, then Full Professor at the University of Bourgogne at Dijon from 1981 to 1998 and Full Professor at Clermont University, since 1998. His research focuses on the acquisition, learning and use of symbolic systems: writing, counting and drawing. The studies of written includes reading, but he is mainly focused on written production (texts but also words, including spelling). The studies of numeration systems address both the beginning of calculation (counting) and later activity (transcoding, through international comparisons) and more complex, such as solving arithmetic problems. One of the favourite themes is the management by individuals of operations or problems and the effects of capacity limits on activity.

Learning both
is important

Michel Fayol est un chercheur français, professeur émérite en psychologie du développement, spécialisé dans l'acquisition de l'écrit, en particulier l'acquisition de la lecture et de l'orthographe en français, et dans l'acquisition des compétences numériques chez l'enfant.

Hand writing vs. typing on a computer



- Handwriting helps you learn
- Can enhance cognitive processing and memory retention
- Allows for a more tactile experience and can be seen as more intimate and personal

- Allows for increased speed and efficiency in the writing process
- Require less planning time and allow for easier
- Computer-based writing tools have been found to be faster than the pen and paper method

Discussion and reflection

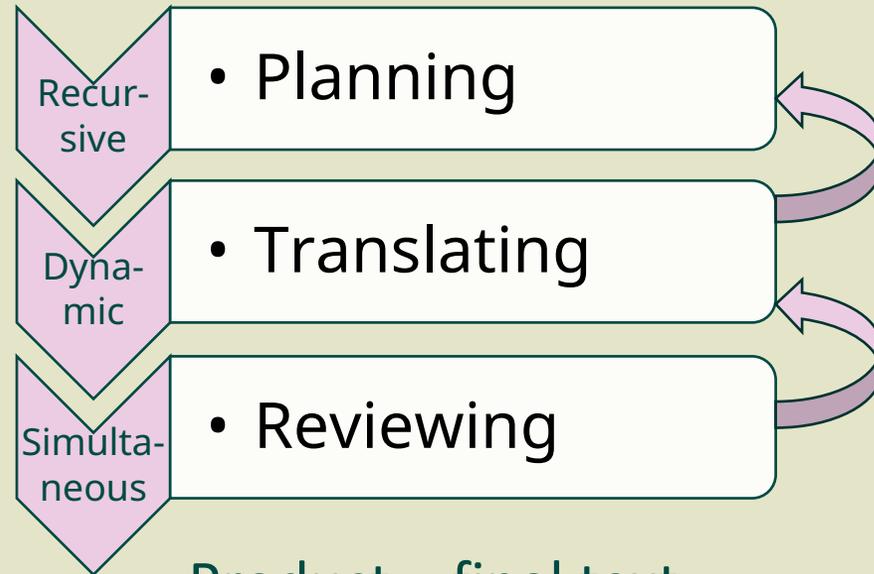
- ***Breakout rooms***
- What kind of writer you are?
- Do you write in the same way in different languages? Or, for example, on a different medium (computer, paper and pen, mobile phone...)?
- Do you think ahead and plan ahead, do you make support lists (mind maps...) or do you plan as you write?
- Discuss with your group and write you description / reflections in the group discussion area / white board

White board –
add your
comments

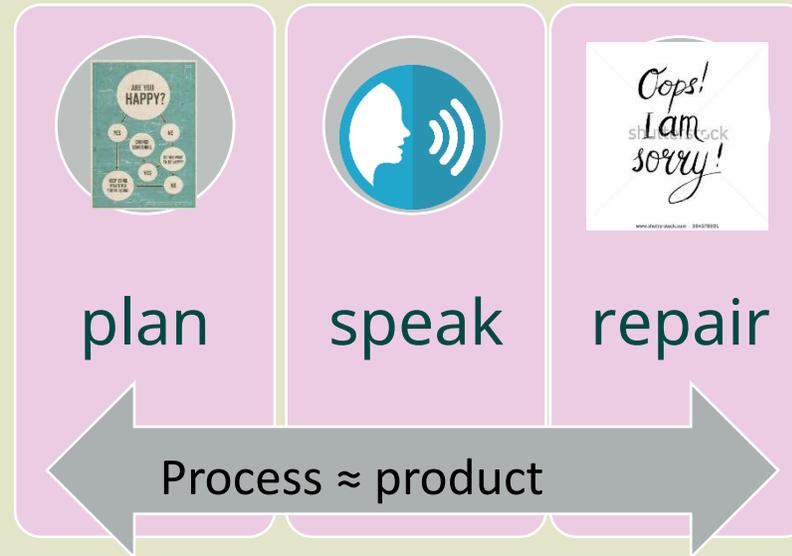
Process of writing vs. speaking

Process (Hayes & Flower 1980)

Cislaru & Olive (2018)



Product = final text



Similarities between processes (Mutta & Suzanne 2012)

1. Pöytäkirjat Euroopan Unionin...
2. Tärkeä...
3. Yhteinen...
4. Yhteinen...
5. Yhteinen...
6. Yhteinen...
7. Yhteinen...
8. Yhteinen...
9. Yhteinen...
10. Yhteinen...
11. Yhteinen...
12. Yhteinen...
13. Yhteinen...
14. Yhteinen...
15. Yhteinen...
16. Yhteinen...
17. Yhteinen...

Exemple du projet LA2

Similarities between processes

Repetition

« Ce n'est pas le langage / c'est pas le langage ? / o'est le o'est le contenu [...] pour les cours de langue si / ou / e bien-ou / c'est le langage qu'on évalué et aussi la structure de la qu'on écrit et e [...] mais par exemple pour le travail qu'on e rendu pour problématique de la qu'on a pas rendu il e pas distribué on e soumettre au note »

Speech

1. Poutant, il serait bon pour le si les pays qui appartiennent e à l'Union...
2. Européenne comme-mais qui ne'utilisent pas l'euro encore -c'est-à-dire le Suède, le...
3. Denmark et le Grande-Bretagne -commencent-à-commencent-à...
4. ...
5. ...
6. ...

3. Tanska ja Iso-Britannia alkavat alkavat
4. olivat osa Uniota

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Pauses

Speech

« Je rapport aux sorts d'examen qu'il faut des demandes, pour-tu me dire ce que tu en penses ? ou pas-à ce que tu penses de ces sorts ? »

« e de ce que tu écrit ? / ou / -0.04- / de la forme de ces examens que tu as passé / -0.04- ee -0.04- ee -0.08- / peut-être en général ou alors en comparant avec ce que tu as passé en Finlande ou ce qu'on tu était habitué / -0.18- e e / tu se dit que c'était différent n'est-ce pas ? / e qui e c'est je pense que les -0.02- les questions qu'on nous e demandées sont -0.08- e peut-être plus générales -0.14- e que ce que tu était habitué à ce type d'examen ? / -0.05- e le troue en tout cas qu'il sont qu'ils sont un peu pareils dans le sens à la de sciences sciences politiques en Finlande parce que j'ai fait quelques examens le aussi »

Writing

« -0.06.692- €Euro-0.05.110- / le monnaie unique -0.02.890-
« -0.19.679- €-0.22.808- n' janvier 2002-0.19.644- -0.50.578- Finlande et -0.09.679- douze euros -0.02.890- pour le monnaie de l'Union Europe -0.05.480- en -0.07.495- -0.04.007- -0.22.79- ont laissé leurs monnaies nationales -0.10.660- les -0.04.239- et ont commencé à utiliser le monnaie unique de -0.02.600- le monnaie unique de -0.02.417- euro, le monnaie unique de l'UE -0.09.719- »

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Mutta, M. & Suzanne, V. (2012). Divergence et convergence dans les processus de production orale et écrite en FLE. In A. Kamber & C. Skupien Dekens (Eds.) *Recherches récentes en FLE* (p. 123-145). Peter Lang.

Starting again (changing the structure)

Speech

« ehkä asomman minä se oli se oli melkein...
« Peut-être un peu un peu plus peut-être avant / e o'était c'était presque inutile après [...] maintenant / tu vas dire que ton écriture manuscrite sans police ? / ou / e et aussi comment je fais pas la disposition sur le papier [...] / ou ? / o'était / bonnais trop petit c'était un peu [...] ton c'était difficile à lire après maintenant c'est plus ordonné »

Writing

1. L'homme n'est-pas-fait...
2. ...
3. ...
4. ...
5. ...
6. ...
7. ...
8. ...

1. ihmisen ei ole
2. [ihmisen] ei ole
3. ihmisen olotona, vaikka yksilönä, ei pyyhi luopumaan

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Revising

Speech

« J'avais un cours de cinéma ou quelque chose comme ça et [...] j'ai [...] écrit une analyse [analysi] analyse [analizi] d'un d'un film »

Writing

1. Aupavent les pays européen...
2. ...
3. ...
4. ...
5. ...

3. Kaikilla (länsi-Euroopan mailla) oli oma rahansa, se on
4. siksi talous
5. Euroopan talous...

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Strategies

Speech

« e [...] c'était une ça ça peut être il y avait différents examens mais normalement c'était un ou deux grandes questions essay essay oui ? / essay ok / ou / donc une ou 2 questions à traiter ? / ou c'est ça »

Writing (from stimulated recall)

« mull on yleensäkin oli vähän tommonen kirjoitustaidikko / vieraitten kielen kanssa että / yrittän aina semmosiin rakenteita mitä mie en ees osas sil tulle kyllä viiteitä mut / ehkä niistä joskus sille jotakin oppi / mut sille tietty / välillä kuitenkin / halusin sille / tunneus siihen tunneusempaan vaihtoon - minkä tietää / oikeaksi »

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Substitution

Speech

« e j'en ai e j'en ai récupéré e j'en ai [...] j'ai appris e su fur et à mesure parce que l'année dernière c'était un peu plus dur [...] donc e oui maintenant je pratique beaucoup la relecture je j'ai aussi des amis qui me relisent »

Writing (from stimulated recall protocol)

« erih / asiaa mä näköjään miein loss vähän pitempään / normaalisti varmaan ois voinu sanoa mut ku ei se kuulosta nyt ihan siltä tässä ku mä halusin niin muutin sille / ole fagon / tout à fait normale // »

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Hesitation

Speech

« e [...] j'sais pas [...] comme [...] e [...] j'sais pas e ça ou début ça ça allait tellement vite que [...] j'essaie de noter tout ce que j'étais dans e j'sais pas [...] j'ai pas tout compris non plus [...] dès que je comprenais quelque chose je le notais »

Writing (from stimulated recall protocol)

« jossa mie miein kans et tuleks se nyt # miten toi continue taipuu että onks se # / tuleks siihen u / vai e perään / sit se nähti / um kans liian jotenki lyhyellä ni / mie liiaan en sitten »

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Mental planning

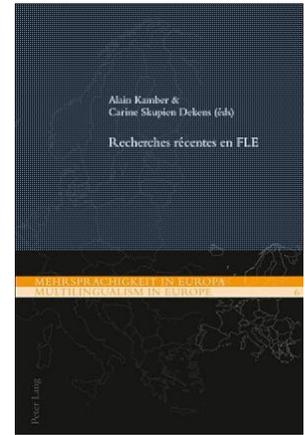
Speech

« C'était mieux que j'ai pensé mais [...] mais [...] le temps était trop court parce que c'est c'était e [...] pour moi je dois penser e autre chose aussi e e e non seulement à [...] sur e sur e le contenu / d'accord / donc e [...] à cause de la langue c'était un peu difficile »

Writing (from stimulated recall)

« Tätä lausutt mä miein sit / kans vaik kuin kauan lu emmä ollu ihan / selville et mitä mä halusin sanoa siinä mä esittelin et ku nyt kirjoitas vaan jotakin eteenpäin / ku ei se tuntunu ollenkaan niin tärkeellä mut mä nyt sit KEhittelin sille / kaikkee mahdollista ja / pyyhkin koko ajan pois kun en ollukaan tyytyväinen »

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Real time studies in writing research

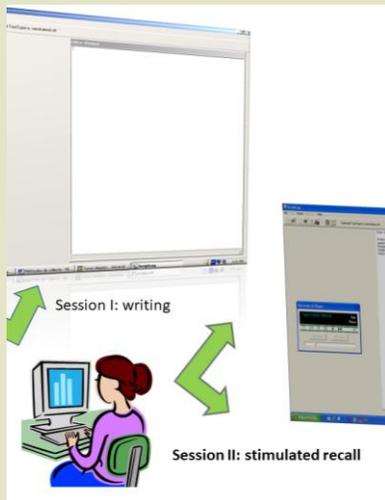
- Non-chronometric methods
 - e.g. think aloud verbalisation, verbal protocols
- Chronometric or measurable methods
 - e.g. real time studies measuring cognitive processes (log files)



Verbal protocols

Ericsson & Simon (1984/1996), Bowles (2010), Tillema et al.(2011)

- *think-aloud* protocol (simultaneous)
- *retrospective verbal protocol* (after the task)
- *stimulated recall* (retrospective but with a stimulus)



ScriptLog

j'ai probablement pensé à ce mot intégration et puis après j'ai réfléchi à comment écrire [...] j'ai l'impression que les mots états nations et états membres devraient être écrits avec une lettre majuscule mais ça l'air un peu bizarre je ne sais pas pourquoi je pense comme ça ...

I probably thought of this word integration and then I thought of how to write [...] I have the impression that the words nation states and member states should be written with a capital letter but it looks a bit weird I don't know why I think like that ...

GenoGraphiX-Log (GGXLog)

- Graph theory-based keystroke logging software
 - Data collection
 - Analysis of writing processes and products
 - Visualization of writing processes
- (Caparossi & Leblay 2015)

HEC
MONTRÉAL

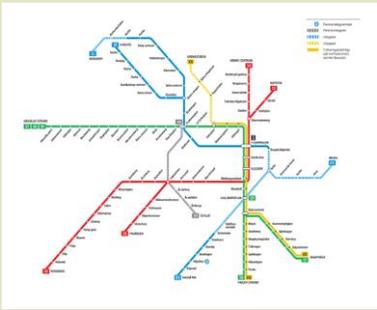
item
Institut des textes et manuscrits modernes



GERAD

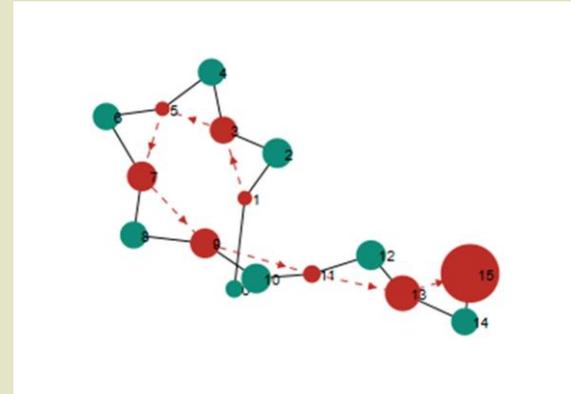
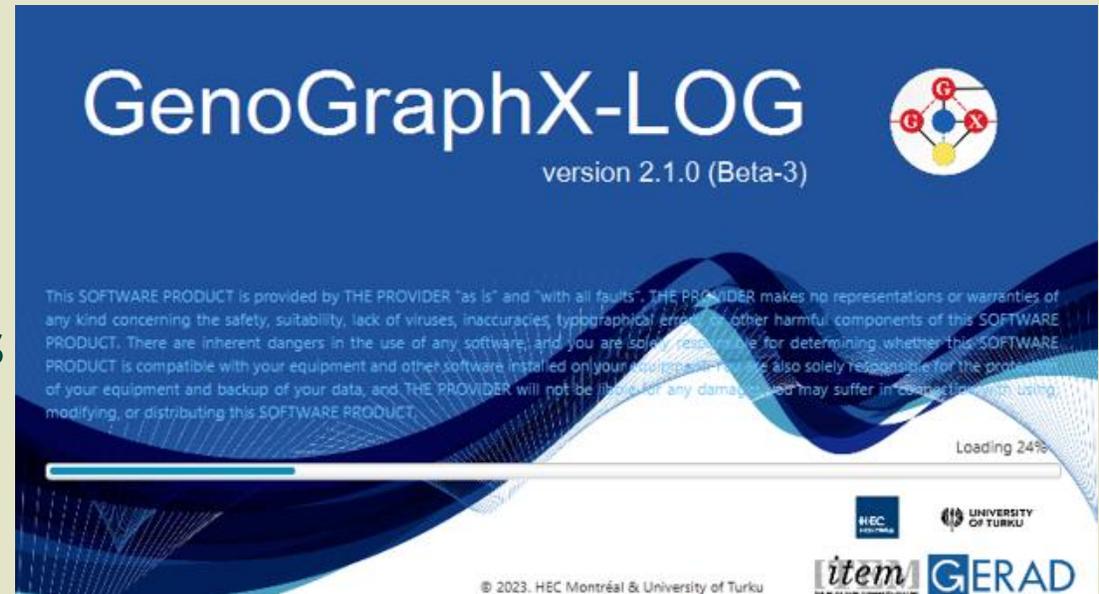
 UNIVERSITY
OF TURKU





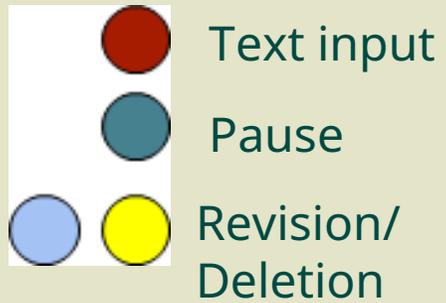
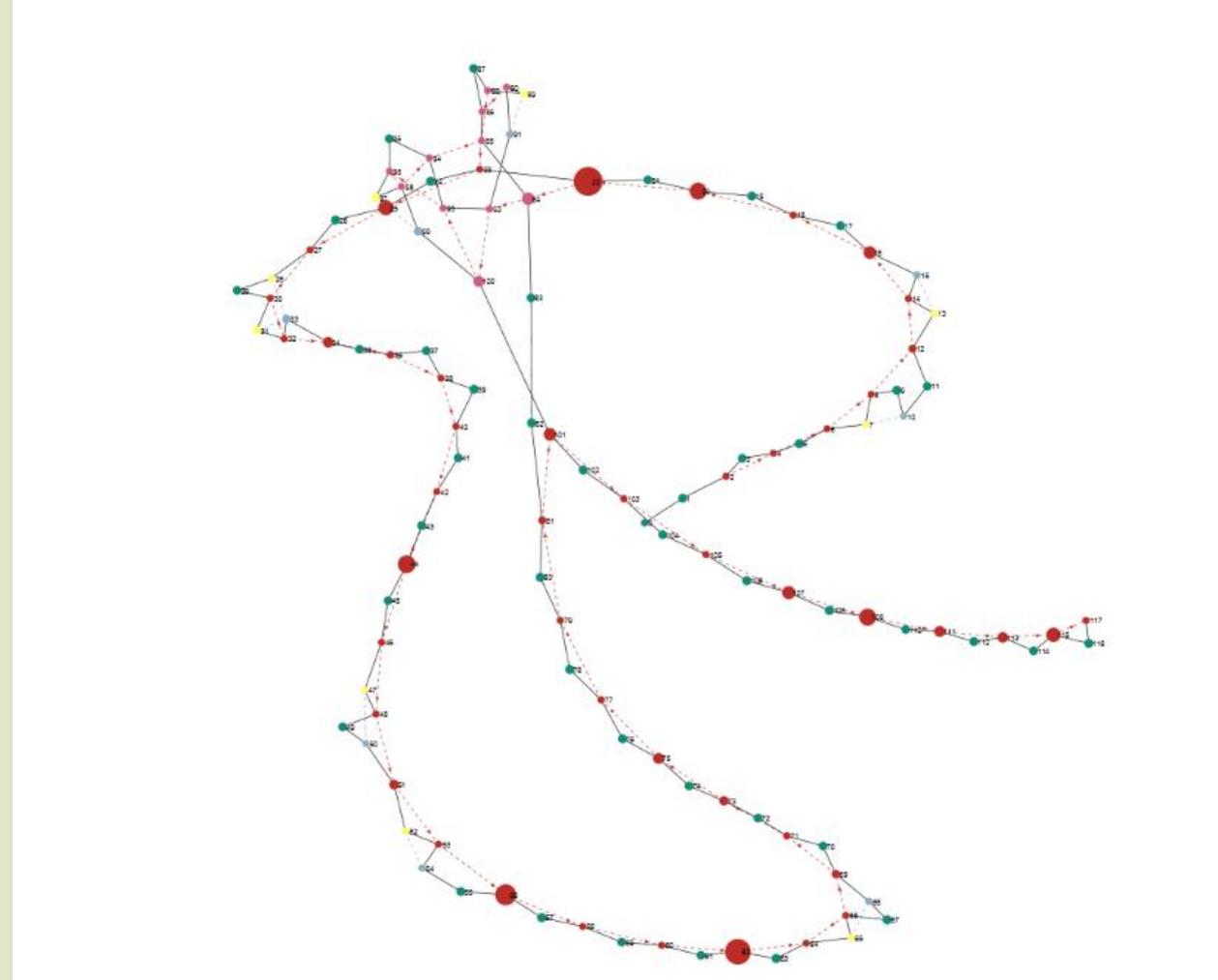
GenoGraphiX-Log (GGXLog)

- Innovative method
- Examines the events in the writing process
- Looking for links between events
- Puts events in chronological order (Leblay & Leblay 2019)
- The graph describes the relationships between different points connected by lines (cf. metro map)
- Good tool for visualizing the process; colors play an important role (Leblay et al. 2022)



All the illustrations are based on real graphs from [GenoGraphiX-LOG](#) software.

GenoGraphiX-Log (GGXLog)



EXAMPLE L2 ENGLISH (2007) 00:58

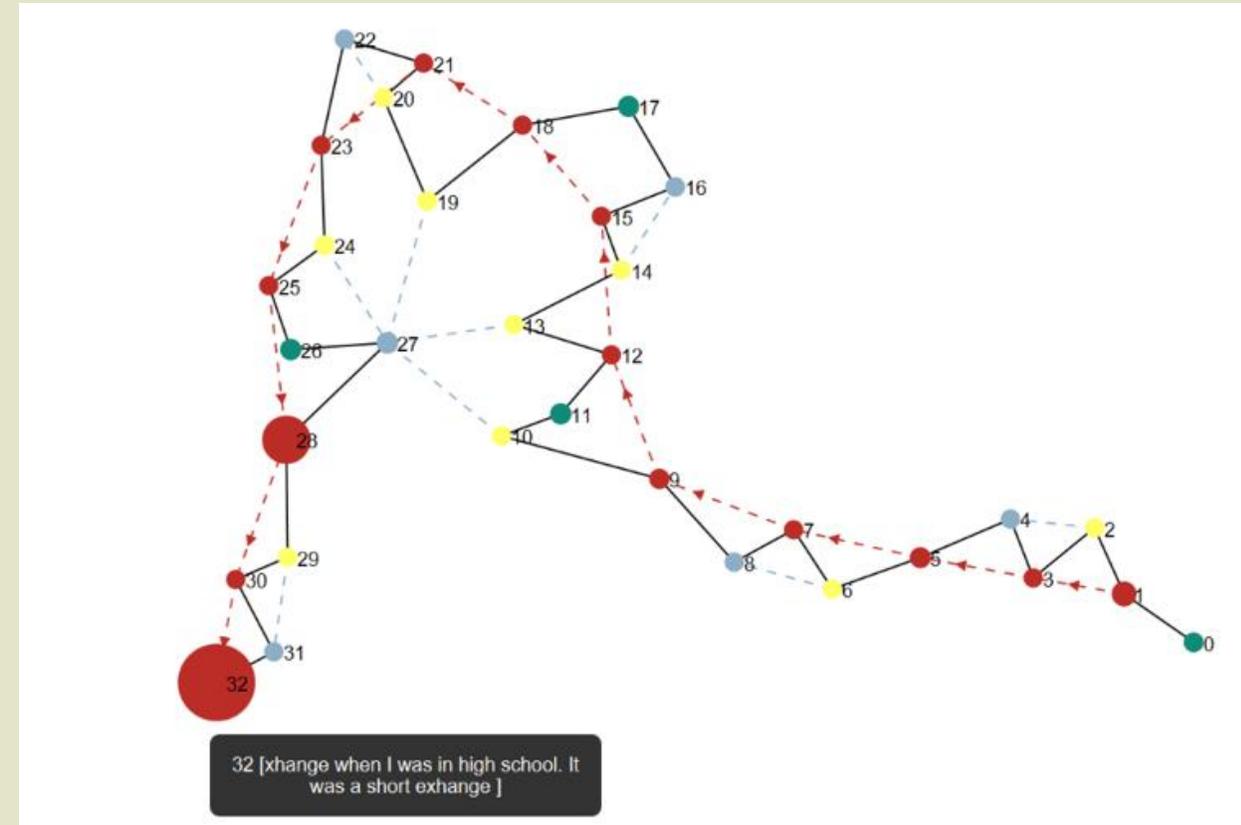
Initial phase (title + first sentence)

<MOUSE EVENT>The benefits of
su<BACKSPACE>tudent
exh<BACKSPACE>change<RETURN><RE
TURN>

<4529>I neve<BACKSPACE4><3249>got
to <BACKSPACE3>the
<4881><BACKSPACE11>I had the
privilege of doing a student
ec<BACKSPACE>xhange when I was in
high school. It was a short exchange

Linear text

Cf. ScriptLog program



GenoGraphiX-Log (GGXLog)

- Multi-method approaches are needed to describe complex writing processes
 - E.g. keystroke log files, background questionnaires, post-interviews and/or eye-tracking techniques
 - (Révész et al. 2017; Galbraith & Baaijen 2019; Révész et al. 2019; Davoodifard 2022)
- In education, visualizations are often used to help learners to understand complex themes or phenomenon (Vieira et al. 2018)

Writing and feedback as a method of raising writer awareness

Language awareness in writing

- Verbalization enables the study of linguistic knowledge and writing processes (Rättyä 2013, 2015; Juvonen et al. 2019; Wengelin 2014; Mutta 2020)
- Analyzing writing processes alone or with a peer learner generates meta-linguistic information that supports learning and knowledge about writing processes (Laine 2019; Manchón 2021; Bowen ym. 2022; Mutta & Laine 2022)

Language awareness in writing

 GGXLog: play back view + stimulated recall interview/feedback

- Learners are motivated to watch a recording of their writing process (Laine 2019; Laine & Mutta 2022).
- The keystroke logging can be used to
 - developing textual skills for different text types,
 - giving (peer) feedback,
 - learning writing strategies,
 - regulating one's own behavior (see Bowen et al. 2022)
 - and identifying and developing one's own writing profile (cf. Mutta 2020).

→ Examining the recorded process and reflecting on one's own writing profile gives writers tools and meta-linguistic skills for conscious writing (Laine & Mutta 2022)

Feedback and reflecting on the process

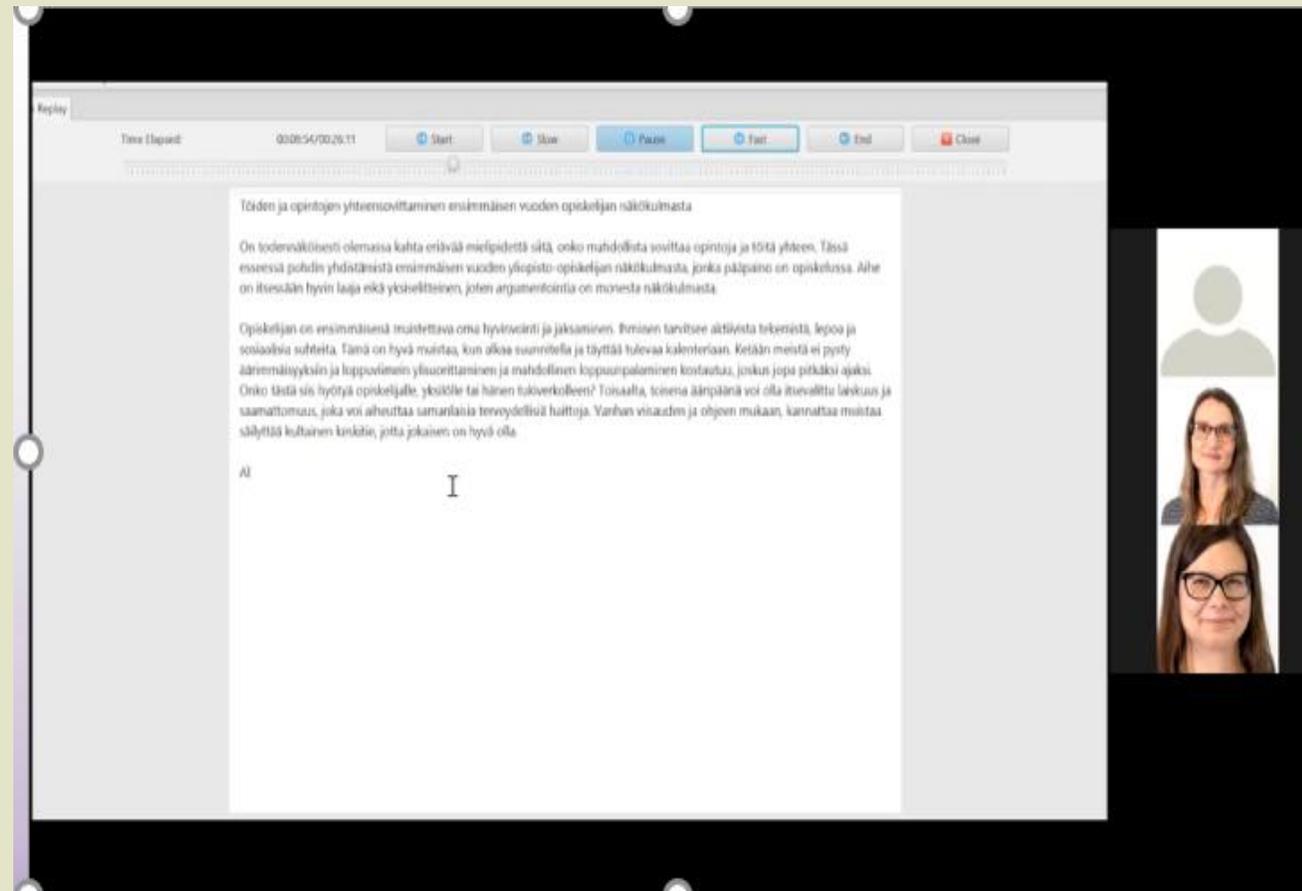
- Teachers' and learners' pedagogical tool

Teacher: You've obviously got a bit of a break like that between those paragraphs. Before you start a new song, do you think about what you're writing or why you're taking a longer break?

P6: Yes, I always think about where I'm starting from and quite often I just write the end of the piece and then maybe think about whether there's anything more to add or correct, then I move on to something new, so that I don't work on many pieces at the same time. [...]

Teacher: Yeah, you haven't really gone back to what you were doing before, at least not so far, that you've gone straight on from there.

(P6, Finnish transcript 08:56-10:22, on video 04:49-05:30) (Laine & Mutta 2022) (translated from Finnish)



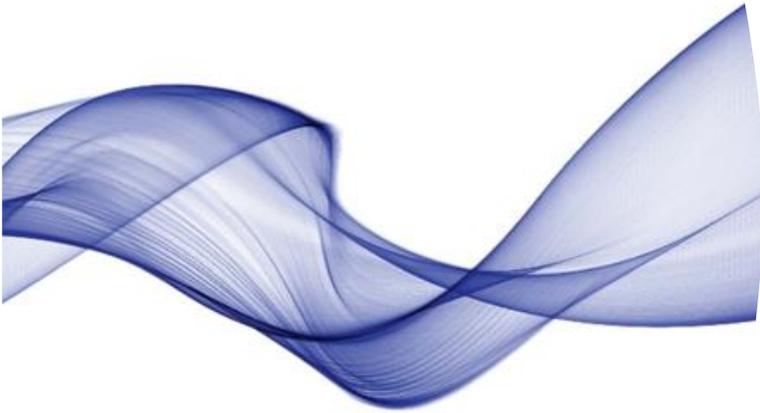
Verbalisations are in general done in L1 to reduce cognitive load

Feedback

- Writing is a process, and it is vital to get feedback on it
 - developing as a writer and recognizing one's own writing style in different languages
- Feedback by teachers and/or peer learners, or automatically generated feedback (Luo & Liu 2017; Vandermeulen et al. 2023)
- Learners usually receive feedback on the finished product/output and, for example, on the plan attached to it.
- The keystroke logging allows one to review the entire typing process and provides feedback on the process (Wengelin & Johansson 2023; Vandermeulen et al. 2023).
 - *Process-oriented* feedback
 - More detailed information for writers about their own writing methods and strategies (Vandermeulen et al. 2023)
 - The process affects the quality of the written text, for example, the amount of planning and revising that goes into it.
 - Individual differences between authors can be large (e.g. Baaijen & Galbraith 2018)

Writing processes and writer profiles

Fluency in L2 Learning and Use



Edited by Pekka Lintunen, Maarit Mutta and Pauliina Peltonen

Mutta (2020): L2 Fluency and Writer Profiles

Writer profiles

Five writer profiles based on three aspects:

- a) time taken and final product
- b) pausing behavior
- c) revision behavior

(Van Waes 1992; Van Waes & Schellens 2003; Mutta 2020)

1. Initial planners
2. Fragmentary first-phase writers
3. Second-phase writers
4. Non-stop writers
5. Average writers (closest to average values of the variables)

→ Depending on the research focus, different more specified profiles



Initial planners make a rather small number of revisions, most of them occurring in the second phase. They have the relatively longest initial planning phase, and their average pause length is relatively long, since the longest and total pause times are significantly higher than the average.



Fragmentary first-phase writers have a revision attitude that heavily concentrates on the first phase. The total number of revisions is higher than that of other groups, but the second phase contains few revisions, the time for initial planning is restricted, and pauses are manifold and relatively short, which makes the process strongly fragmented.



Second-phase writers' revision is concentrated in the second writing phase, and this allows for ample attention to changes above word level. They have a long initial planning phase but once they start writing, they pause relatively little, even if the pauses are relatively long.



Non-stop writers, on the other hand, revise least of all the groups, pause less than others and the total pause time clearly lies below average, their processing time is shorter, and they spend little time on initial planning.



Average writers' profile shows values that are closest to the average values of each of the variables of the total group.
(Van Waes 1992; Van Waes & Schellens 2003: 836-837)



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Fragmentary first-phase writers have a profile that concentrates on the first phase. The total number of revisions is higher than that of other profiles. They contain few revisions, the time for initial planning is restricted, and pauses are long. This makes the process strongly fragmented.



Second-phase writers' revision profiles focus on the second phase. This allows for ample attention to changes above word level. They spend little time on initial planning, and when they start writing, they pause relatively little, even if the pauses are relatively long.



Non-stop writers, on the other hand, revise less than others and the total pause time clearly lies below average, their processing time is shorter. They spend little time on initial planning.



Average writers' profile shows values that are closest to the average values of each of the variables of the total group. (Van Waes 1992; Van Waes & Schellens 2003: 836-837)

Depending on the research focus, different more specified profiles.

Example : Writer profiles **at the initial** phase of writing processes

Profiles

Description

Explicit planner

Writer starts with (the title and) the plan. It usually takes time to complete the first sentence. The text can be inserted in the middle of the plan. There may be a lot of writing process events, but some writers also plan quickly and briefly.

Implicit planner

Writer starts slowly (with long pauses) and **has a plan in mind.** However, the first sentence is completed quite quickly, and there are few corrections in the output after the start. **Long bursts distinguish from a slow production starter.**

Slow production starter

Writer starts slowly and completing the first sentence takes quite a long time (more than five minutes). There are a considerable number of pauses and few long bursts in the process. Lengthy revisions, and therefore the output is scarce, even though a lot of time is spent.

Tentative starter

Writer types **and revises the beginning of the text multiple times,** and therefore there are many events when writing the first sentence. The writer starts fairly quickly and does not make a plan at the beginning but plans while producing the text and doesn't spend a lot of time writing the first sentence.

Quick starter

Writer starts quickly (with a pause of under 2 s or no pause at all), **and the first sentence is short:** writing time less than a minute, few events and not many corrections.

Quick and productive starter

Writer starts quickly and produces a lot of text. There are few corrections and few pauses. Productive in a fairly short time.

Examples

EXAMPLE L2 FRENCH (1007)

02:14

<MOUSE EVENT>

<RETURN><RETURN><11
632>à mon avis<2257>

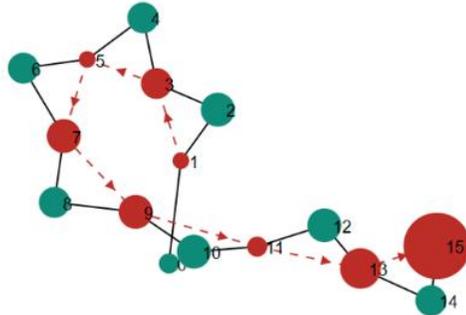
, <8516>des études

<2324>en échange

<63046>sont

<16229>toujours une

<5076>bonne possibilité



Implicit planner L2 French

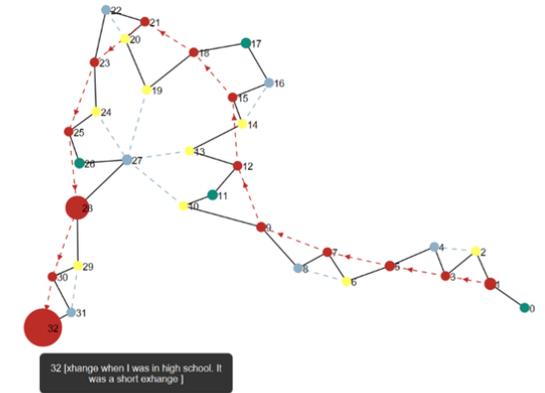
EXAMPLE L2 ENGLISH (2007)

00:58

<MOUSE EVENT>The
benefits of
su<BACKSPACE>tudent
exh<BACKSPACE>change<
RETURN><RETURN>

<4529>I
neve<BACKSPACE4><3249
>got to <BACKSPACE3>the
<4881><BACKSPACE11>I
had the privilege of doing a
student ec<BACKSPACE>

xhange when I was in high
school. It was a short
exchange



Tentative writer L2 English

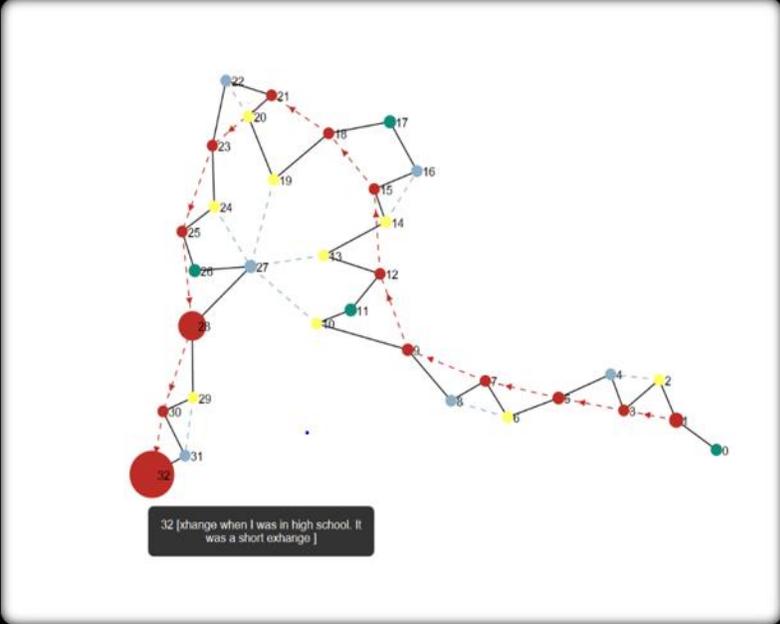
Example: Fluency in spoken and **written** production

- Written fluency: different measures for the writing process and the final product (Cislaru & Olive 2018; Kowal 2014; Mutta 2020)
- In product: length, structure and cohesion of the text
- In process: measures of fluidity (e.g., writing time, pause times, corrections, length of bursts)

EXAMPLE L2 ENGLISH (2007)
00:58

<MOUSE EVENT>The benefits of su<BACKSPACE>tudent exh<BACKSPACE>change<RETURN><RETURN>

<4529>I neve<BACKSPACE4><3249>got to <BACKSPACE3>the <4881><BACKSPACE11>I had the privilege of doing a student ec<BACKSPACE>xhange when I was in high school. It was a short exchange



32 [change when I was in high school. It was a short exchange]

(Fluency) profiles

- Objective measures of product and process
 - Spoken: time related phenomena, interaction, repair, CAF, use of metalinguistic discourse markers (Dumont 2018; Koch & Thörle 2021)
 - Written: time, bursts, pausing behaviour, revisions and corrections (Van Waes 1992; Van Waes & Schellens 2003; Mutta 2020)
- A comprehensive analysis to examine fluency profiles **across** spoken and written production (Lintunen et al. 2020)
- Comparing the L2 learner's fluency profile in their native language (L1) and L2 to reveal idiosyncratic patterns that are user-specific (Peltonen 2018)

Data collections and fluency measures

Spoken	Written	Other
<ul style="list-style-type: none">• Length of production (total time)• Speaking time (ST; total time excluding SPs)• Syllable count• Syllables / minute of total time (speech rate)• Mean length of utterance (syllables / number of utterances)• Silent pauses (min. 0.25 sec.) / minute of ST• Repair / minute of ST	<ul style="list-style-type: none">• Time of writing process• Word count• Words per minute• Mean length of bursts• Pause time (% of cognitive pause ≥ 2 seconds)• Deletions (percentage of characters)• Product to process ratio	<p>LexTale CEFR evaluation (writing)</p>

= fluency profiles

Writer profiles (L1 Finnish, L2 English)

Profiles	Description	L1 N=11	L2 N=11	CEFR L2
1. Fast and productive writer	Productive in a fairly short time. Writes quickly, produces a lot of text and has long bursts. There are few corrections and few pauses.	2	3	B1 B2 C2
2. Fast writer	Writes quickly but is not very productive. Bursts are of average length and the number of pauses is higher than the average. The number of revisions varies.	3	2	B2 C1
3. Slow and productive writer	Writes slowly but is productive and has long bursts. There are few pauses and lengthy revisions.	2	3	B2 2 x C1
4. Slow and reflective writer	There are a considerable number of pauses and lengthy revisions, and therefore the output is scarce, even though a lot of time is spent.	4	3	2 x B2 C1

Seven writers have the same profile in L1 and L2

Conclusions: differences and similarities

- Some students are quite fluent speakers and writers both in the L1 and L2.
- They usually have a high proficiency level based on their LexTale scores, but the **writing proficiency level** is more varied.
- The fluency profiles in production are **not linearly linked** to the proficiency levels
 - e.g. ID 2015 and ID 2016 are slow speakers and writers, but their proficiency level is C1/C2
 - e.g. ID 2017 is fast and productive writer in L1/L2 and fast speaker in L1 but slow and reflective speaker in L2. ID 2017's proficiency level is B2 according to the LexTale score and B1 in written production.
 - Just one students had the same profiles across languages and modes:
ID 2016: slow and reflective speaker and writer
- It seems that fluency profiles are quite individual.
- (Mutta et al. 2025)



Questions? Comments?



Pedagogical experiment

Pedagogical experiment

Workshop: 8 weeks

In the workshop:

- a) Students will learn about a data collection method (GenoGraphix-Log) tool used to visualize the writing process.
- b) The aim is also to reflect on differences and similarities between writing processes in L1 and L2.

Tasks during the workshop

- Inputlog test and background survey
- Writing in three languages (L1 and two L2s)
- Verbalization of one's own writing process
- Transcription of verbalizations
- Reading articles
- Pair work and oral presentation
- Making and writing one's own analysis (report)
- Course feedback

Objectives of the experiment	Progress of the course	Tasks	Learning	Objectives
Exploring one's own multilingual writing processes Self-reflection and increasing writer awareness Learning about the research process and practical practice	Step 1	Installation of GGXLog, a preliminary introduction to the course and a general introduction to writing research	Students will be oriented to the course content, data collection methods and research priorities in multilingual writing.	Students are introduced to process-oriented writing and oriented to the role of the researcher.
	Step 2	Conducting the Inputlog test and background survey	Students analyse their own writing skills by answering a background questionnaire and taking a writing speed test.	Students will reflect on their relationship with their own writing and learn about the multi-stage research process.
	Step 3	Writing texts in L1, L2 and L3 (2 different times)	Students write an argumentative text spontaneously in three different languages without any help, except the assignment and their own mental lexicon.	Students make use of the linguistic capital they have at their disposal. They will also become familiar with the method of collecting research data.
	Step 4	Verbalization and (automated) transcription of two texts	Students will examine their own writing process in real time in their L1 and 2, make oral observations and learn the basics of transcribing recorded speech.	Students will be introduced to the stimulated recall method of studying writing process and to transcribing the text with the help of digital tools.
	Step 5	Presentation of the project and introduction to the theoretical framework	Students will learn about the objectives of the project KISUVI and familiarise themselves with the subject by reading scientific articles.	Students will understand the framework and main methods of writing process research. They will be able to use these in their own analysis.

	Step 6	Pair work on one's writing processes	Students will learn to analyse their own writing processes in L1-L3 and compare them with those of their peers. Each pair will focus their analysis on a specific process phenomenon.	Students will practice collaborative writing process analysis and examine their own processes objectively.
	Step 7	Pair work presentation and group discussion	Students present orally in pairs the results and findings of the analysis and participates in a joint discussion by comparing the observations of others on different phenomena with the results of their own presentation.	Students will learn how to orally present and discuss research findings in a concise form. Students will receive (peer) feedback on the observations on their writing processes.
	Step 8	Analysis and reflection on one's own writing process and course feedback	Students will learn to analyse and report on their writing process in writing and to reflect on their own writing process from a new perspective.	Students will develop their multilingual writing skills. They will learn to report on research findings and to reflect on the application of different methods to research and teaching.

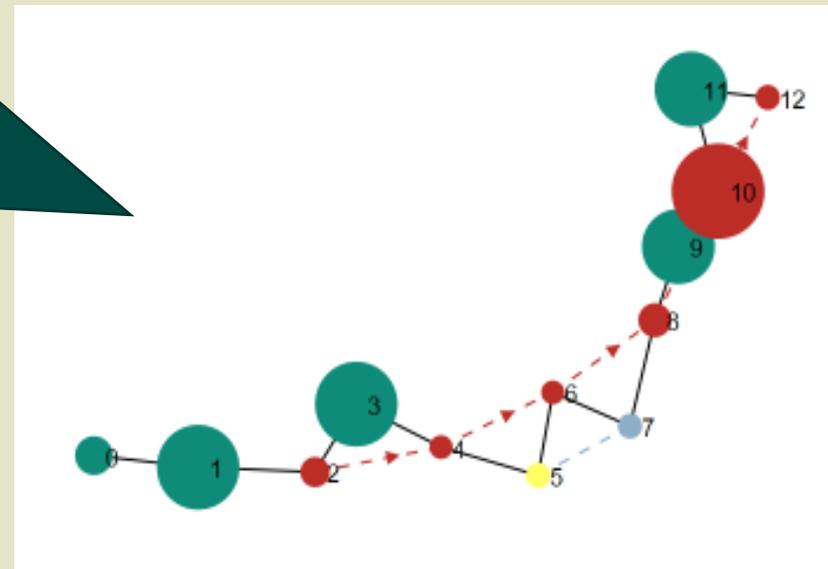
Table 1. Overview of the pedagogical experiment by phase

Adapting the model by Bouwer & De Smedt (2018) and Rijlaarsdam et al. (2017) to report pedagogical phases

Analysis of the reports (2067 ja 2068)

I usually write in bursts, and there may be corrections or pauses between bursts, but they are not usually long in languages I know. The languages in which I am weaker, on the other hand, are more break-oriented. **However, it was surprising to find that even in those languages I write in bursts when I write.** (2068)

Before this course, I considered myself a somewhat impetuous writer. **However, at the end of the course, I can say that *impetuous* is definitely not the right adjective to describe my own writing style.** I learned during this course how much I try to influence the style of my writing in these ways. (2067)



Feedback for the course

I liked the fact that the meetings were **more discussion-based and less lecturing**. The wide variation of different ways of working was a nice change and suited the nature of the course well. I **would perhaps have liked more background reading**, as I was very interested in the topic.

I **particularly liked the hands-on method**. Verbalization and analyzing my own texts and writing processes gave me a lot to learn as a writer and I will continue to use them in the future, both in my own texts **and in my teaching**.

GGXLog is still a bit of a mystery. **Zoom worked well as a verbalization tool**. Transcription was also more convenient with Word Dictate, but there is still problems with speech recognition.

The course was instructive and brought out **interesting perspectives on both my own and others' writing processes**. The workshop format gave the feeling that the threshold between teachers and students is low → **the student's sense of agency was emphasized**.



Having feedback

- Writing is a process, and it is vital to get feedback on it
 - developing as a writer and recognizing one's own writing style in different languages
 - *Process-oriented* feedback
 - More detailed information for writers about their own writing methods and strategies (Vandermeulen et al. 2023)
 - The process affects the quality of the written text, for example, the amount of planning and revising that goes into it.
 - Individual differences between authors can be large (e.g. Baaijen & Galbraith 2018)

Me as a writer vs. ChatGPT

Ethics

The future of writing teaching and research in an AI world

- Why are we studying how to teach writing if AI will write everything for us in the future?
- Why do we need writing skills or the ability to write different texts?
- Why should we need to master the norms of language or know how to use different registers and/or varieties of language?



Rédigez un texte argumentatif sur le thème **Qu'est-ce que vous pensez des études en échange? Quels sont les avantages? Quels sont les inconvénients?. Un texte de niveau A1 / B1 (CEFR)**

Les études en échange sont une opportunité pour les étudiants de découvrir une nouvelle culture tout en poursuivant leur formation. Ils ont des avantages et des inconvénients.

D'un côté, les études en échange permettent aux étudiants de découvrir de nouveaux horizons. Ils peuvent apprendre une nouvelle langue, découvrir une nouvelle culture, rencontrer de nouvelles personnes et se faire des amis du monde entier. Les étudiants peuvent également bénéficier d'une formation plus diversifiée, en suivant des cours qui ne sont pas disponibles dans leur université d'origine. Les étudiants en échange peuvent également améliorer leur CV en ajoutant une expérience internationale, ce qui peut être bénéfique pour leur carrière future.

D'un autre côté, les études en échange peuvent également présenter des inconvénients. Les étudiants peuvent rencontrer des difficultés dans leur adaptation à un nouvel environnement, en particulier s'ils ne maîtrisent pas la langue locale. Les étudiants peuvent également ressentir de la solitude ou de l'isolement loin de leur famille et de leurs amis. Les différences culturelles peuvent également être un obstacle à l'adaptation des étudiants à leur nouvel environnement. En outre, les coûts de l'échange peuvent être élevés, avec des frais de voyage, de logement et de subsistance supplémentaires.

En conclusion, les études en échange ont des avantages et des inconvénients. Cependant, malgré les défis que peuvent rencontrer les étudiants en échange, cette expérience peut être extrêmement enrichissante et leur apporter de nombreux avantages à long terme.

Text at the A1 level (CEFR), 235 words

Les études en échange sont une expérience enrichissante pour les étudiants qui souhaitent découvrir une nouvelle culture tout en poursuivant leur formation. Elles présentent des avantages et des inconvénients qu'il convient d'examiner.

Tout d'abord, les études en échange permettent aux étudiants de s'immerger dans une nouvelle langue et de développer leurs compétences linguistiques. Cela peut être particulièrement bénéfique pour les étudiants en langues étrangères. Les étudiants peuvent également apprendre à s'adapter à un nouvel environnement et à vivre de manière indépendante, ce qui peut être une expérience formatrice. Les étudiants peuvent également rencontrer des personnes de différentes cultures et créer des liens durables.

D'un autre côté, les études en échange peuvent également présenter des défis pour les étudiants. L'adaptation à un nouvel environnement peut être difficile, en particulier si la langue locale est différente de celle de l'étudiant. Les étudiants peuvent également ressentir de la solitude ou de l'isolement loin de leur famille et de leurs amis. Les différences culturelles peuvent également être un obstacle à l'adaptation des étudiants à leur nouvel environnement. En outre, les coûts de l'échange peuvent être élevés, avec des frais de voyage, de logement et de subsistance supplémentaires.

En fin de compte, les avantages des études en échange l'emportent sur les inconvénients. Les étudiants qui participent à un programme d'échange ont tendance à être plus ouverts d'esprit, plus confiants et plus indépendants. Ils acquièrent également une expérience internationale qui peut être bénéfique pour leur carrière future. Bien que les défis puissent être difficiles à surmonter, les avantages de l'expérience en valent la peine.

En conclusion, les études en échange sont une expérience formidable pour les étudiants qui cherchent à élargir leurs horizons et à découvrir de nouvelles cultures. Bien que l'adaptation à un nouvel environnement puisse être difficile, les avantages de l'expérience en valent la peine. Les étudiants qui participent à des programmes d'échange acquièrent des compétences et des expériences précieuses qui les aideront tout au long de leur vie.

Text at the B1 level (CEFR), 325 words

Rédigez un texte argumentatif sur le thème **Qu'est-ce que vous pensez des études en échange ?** **Quels sont les avantages ? Quels sont les inconvénients ?** Un texte de niveau A1 (CEFR)

Les études en échange sont une opportunité pour les étudiants de découvrir une nouvelle culture tout en poursuivant leur formation. Ils ont des avantages et des inconvénients.

D'un côté, les études en échange permettent aux étudiants de découvrir de nouveaux horizons. Ils peuvent apprendre une nouvelle langue, découvrir une nouvelle culture, rencontrer de nouvelles personnes et se faire des amis du monde entier. Les étudiants peuvent également bénéficier d'une formation plus diversifiée, en suivant des cours qui ne sont pas disponibles dans leur université d'origine. Les étudiants en échange peuvent également améliorer leur CV en ajoutant une expérience internationale, ce qui peut être bénéfique pour leur carrière future.

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Un texte de niveau A1 (CEFR), 235 words

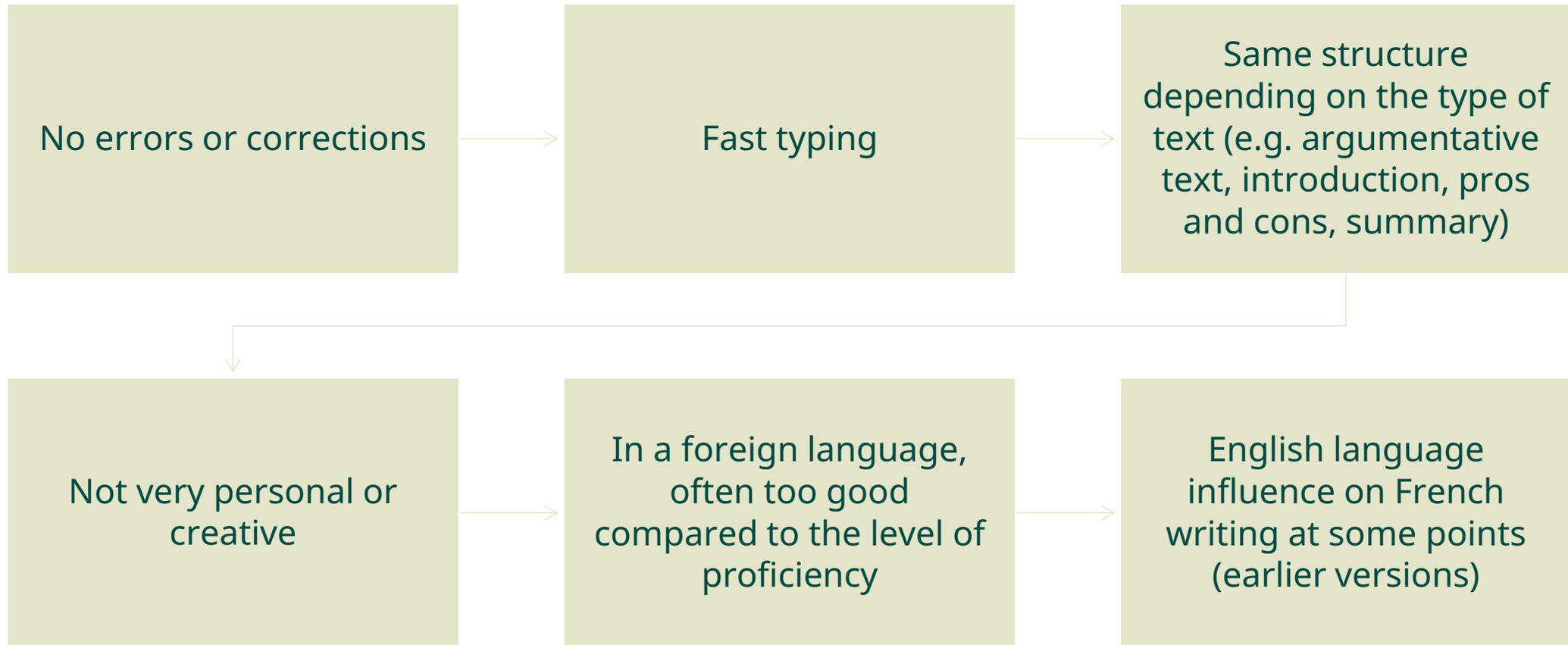
Études en échange

J'ai deux amis qui a étudié **en échange**. Une a étudié en Australia et âutre a étudié au Canada. Elles disent elles leur enjoyer. Je ne sais pas je veux étudie **en échange** une jour. Travailler, peut-être.

Quels sont les avantages? Les avantages d'étudier en échange sont il lise de langue tous les jours et il connaître nouvelles amis. Et **quels sont les inconvénients?** Les inconvénients d'étudier **en échange** est c'est trop cher et on voyage seulement. Il ne vois pas la famille aussi.

A1 - 87 words

ChatGPT vs. human being



Writing a short essay in French (basic level)

Write a short essay (250-350 words). The essay will not affect the course grade, but you will receive feedback on your writing. Do not use ChatGPT, write your own text.

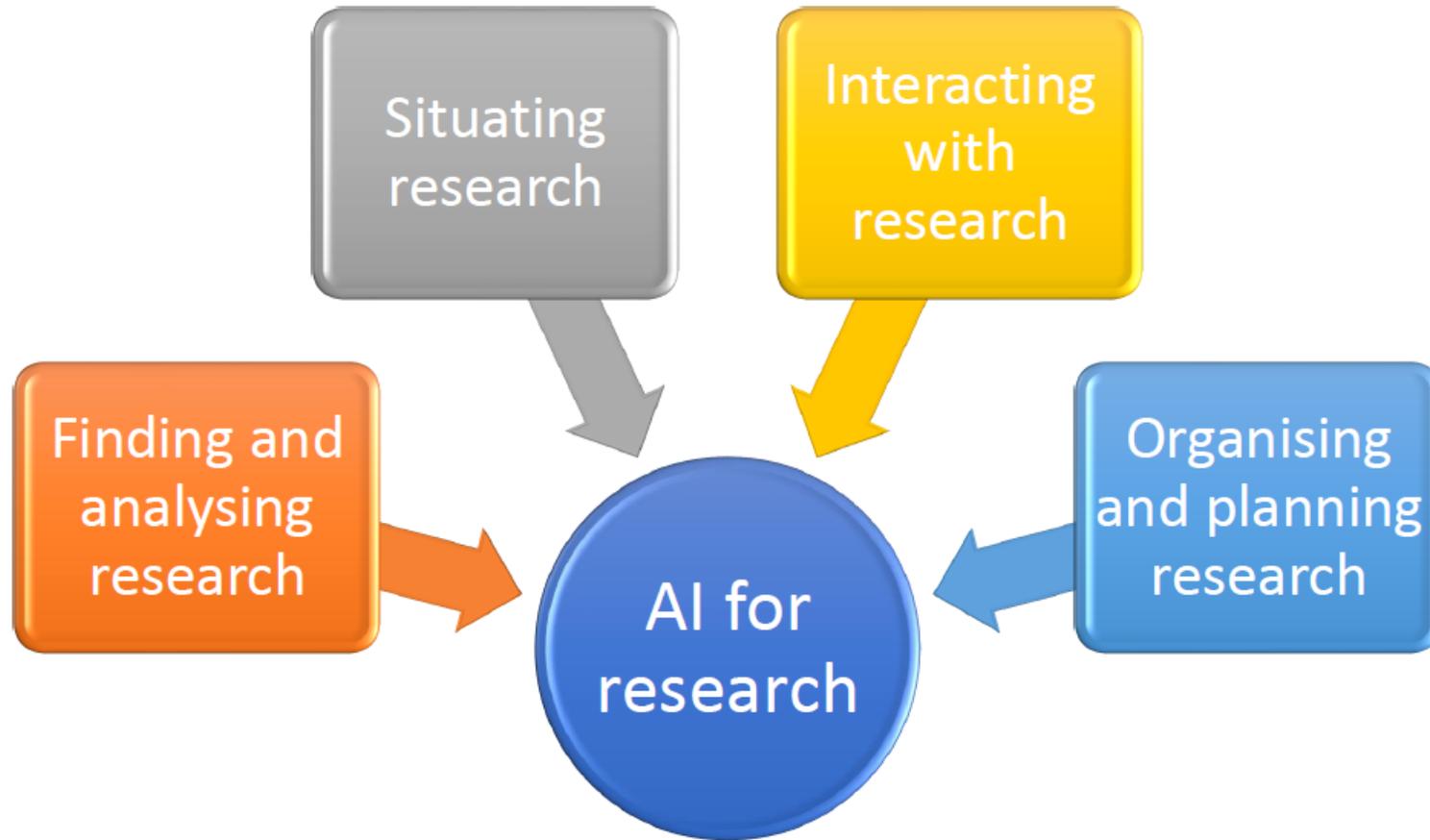
Les consignes en français

I submitted my essay for assessment [via Moodle].

I did the text by using a google translator, after I had first outlined my text in Finnish.



Scaffolding for researchers (and a growing element in teaching)



AI tools: review of (some) current options

- Scispace <https://typeset.io/>
- Elicit <https://elicit.org>
- Perplexity: <https://www.perplexity.ai/>
- Consensus: <https://consensus.app/>
- Paperdigestlit
review <https://www.paperdigest.org/review/>
- Research
rabbit <https://researchrabbitapp.com/home>
- Litmaps <https://app.litmaps.co/>
- Semantic Scholar: <https://www.semanticscholar.org/>
- Vidsummize: <https://vidsummize.com/>
- Notion AI <https://www.notion.so/>
- GTPZero: <https://app.gptzero.me/app/welcome>



AI tools for research

Analysing and finding	Situating	Interacting with	Organising and planning	Cheating?
Scispace: https://typeset.io/	Research rabbit: https://researchrabbitapp.com/home	Chatpdf: https://www.chatpdf.com/	Notion AI https://www.notion.so	GTPZero: https://app.gptzero.me
Elicit: https://elicit.org	Litmaps: https://app.litmaps.co/	Vidsummize: https://vidsummize.com/		Scispace: https://typeset.io/
Perplexity: https://www.perplexity.ai/	Semantic Scholar: https://www.semanticscholar.org/			
Consensus: https://consensus.app/				

How to use ChatGPT or other AI devices ethically?

Brainstorming

Creating examples

Translating

Explaining errors

Explanation by role or perspective

Drafting lesson plans and assignments

Modifying in plain and spoken language

Integrating the content of two courses

Summarizing, classifying, making questions

Creating learning materials

Differentiation of activities

Creating assessment criteria

Etc.

Questions? Comments?



Feedback and questions concerning the first session



Please write down your questions and comments concerning the first session. We'll go through them next time.

The feedback is anonymous.

For the next session on Thursday

Before the second session, please download the GGXLog program. The instructions are in the folder below.



Instructions and user guide



Instruction how to download the program GenoGraphiX-LOG (GGXLog)



1) Download the program on your computer (PC, Mac or Linus) (version 2.1.1 (Beta-3))

<https://gexlog.net/index.php#download>

2) If you have problems to download the program, see the Installation tutorials

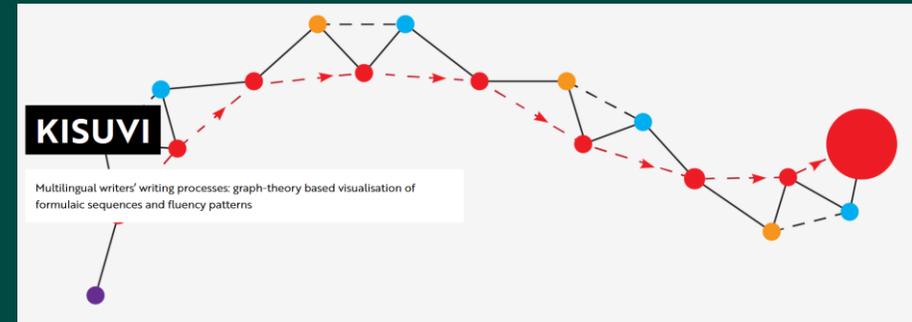
<https://gexlog.net/usersupport.html>

Make a File on your Desktop, for instance Name_GGXLog

If your screen is small, change the Screen resolution to see all the command buttons.

- For instance, Windows: Settings → System → Display → Resolution → Choose 1600 * 900

Thank you for
your attention!



Get inspired



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