

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

Research Methodologies in European Modern Languages and
Literatures

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Thursday, 26.2.2026

16-18 (Finnish time)

For today's session

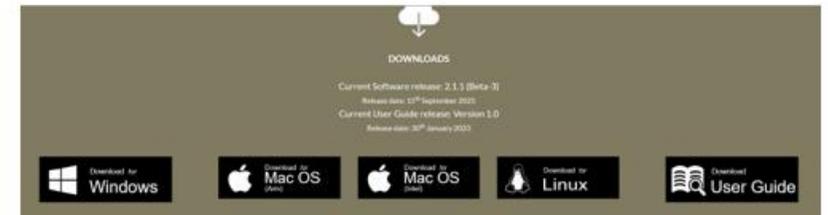
Before the second session, please download the GGXLog program. The instructions are in the folder below.



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

Themes of today's session

Writer awareness

Hands-on activities

Reflecting on the writer processes



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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)



GenoGraphiX-Log (GGXLog)

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

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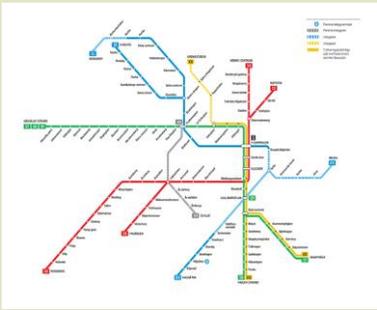
item
Institut des textes et manuscrits modernes



GERAD

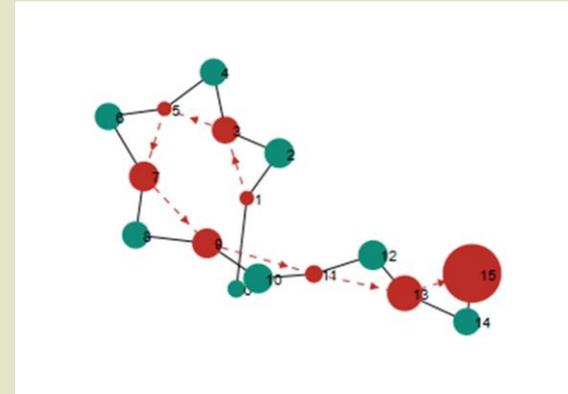
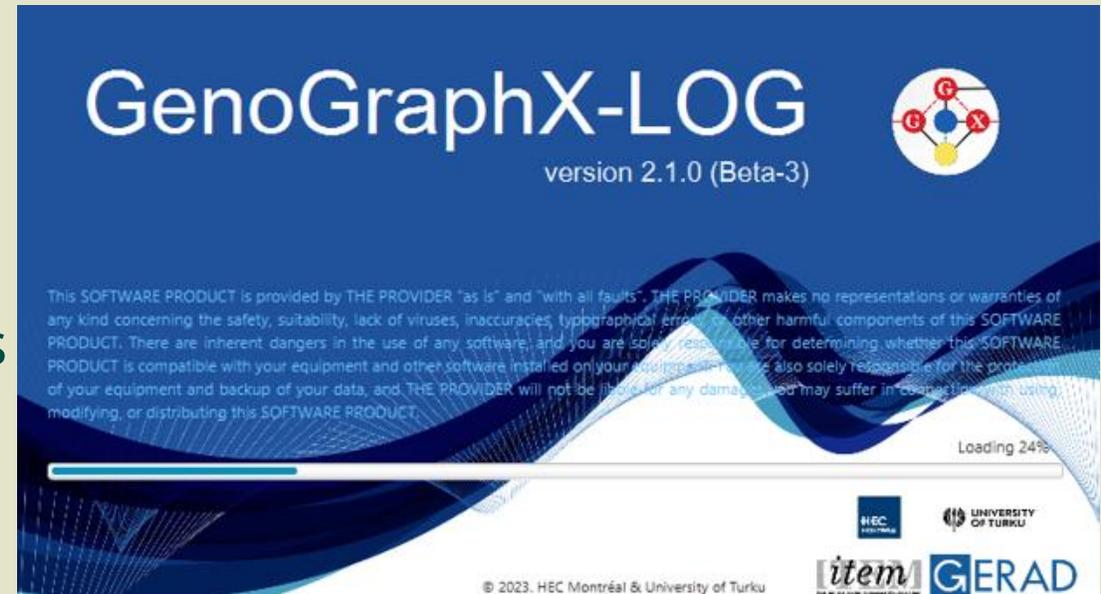
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GenoGraphiX-Log (GGXLog)

- 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)

- 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)

A close-up, high-angle shot of a wooden table in a workshop or office. The table is cluttered with various items: several sheets of paper with text and images, a color calibration chart, and numerous colorful sticky notes (pink, yellow, green, blue). A person's hand, wearing a grey sweater, is pointing at a pink sticky note on one of the papers. In the background, another person's hands are visible, holding a green sticky note. The scene is lit with warm, natural light, creating a focused and collaborative atmosphere.

Hands-on
activities
Instructions
(resolution,
collecting data
and analysing it)

How to
collect data?



Hands-on activities

a) Writing a text with the GGXLog program

b) Alternative: Writing a text on a computer & another task

Reflecting on the writer processes



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Hands-on activities: a) Writing a text with the GGXLog program

Stay in the main room

a) Writing a text with the GGXLog program

Reflecting on the writer processes



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Hands-on activities: alternative b)

Go to the breakout room

b) Alternative: Writing a text on a computer & another task

Reflecting on the writer processes



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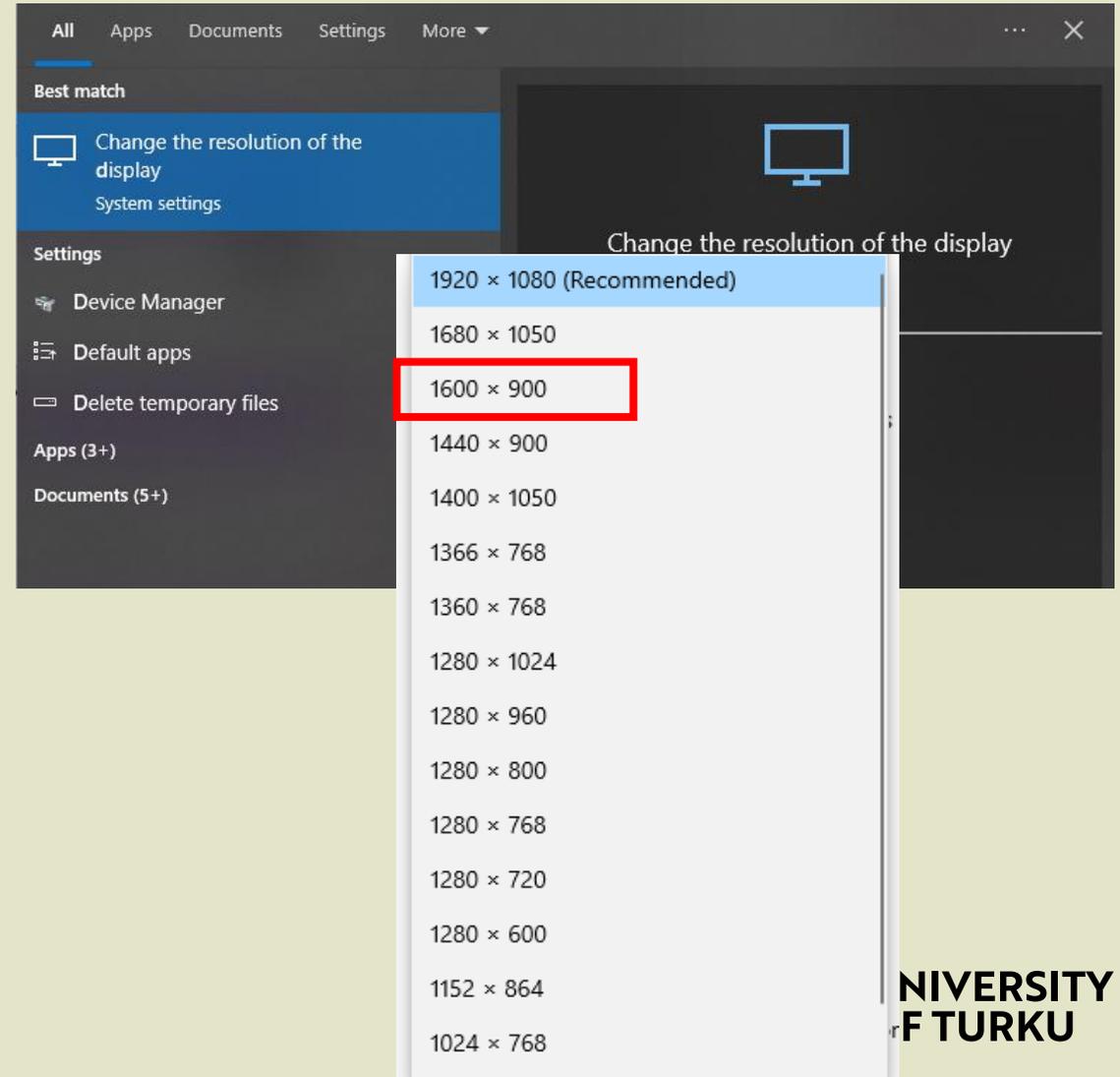


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Main room exercise

Changing the resolution (if needed)

- 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



Breakout room exercise

Breakout room

Alternative b) : Writing a text on a computer & another task

- Write an argumentative text in English (max 15 minutes) on the following topic:

What is your opinion on student exchange?

What are the advantages? What are the disadvantages?

- Do not use any extra tools or dictionaries. Just your mental lexicon.

Main room exercise

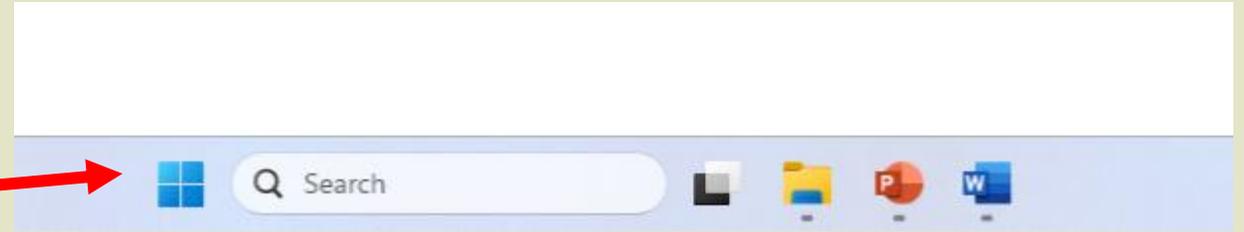
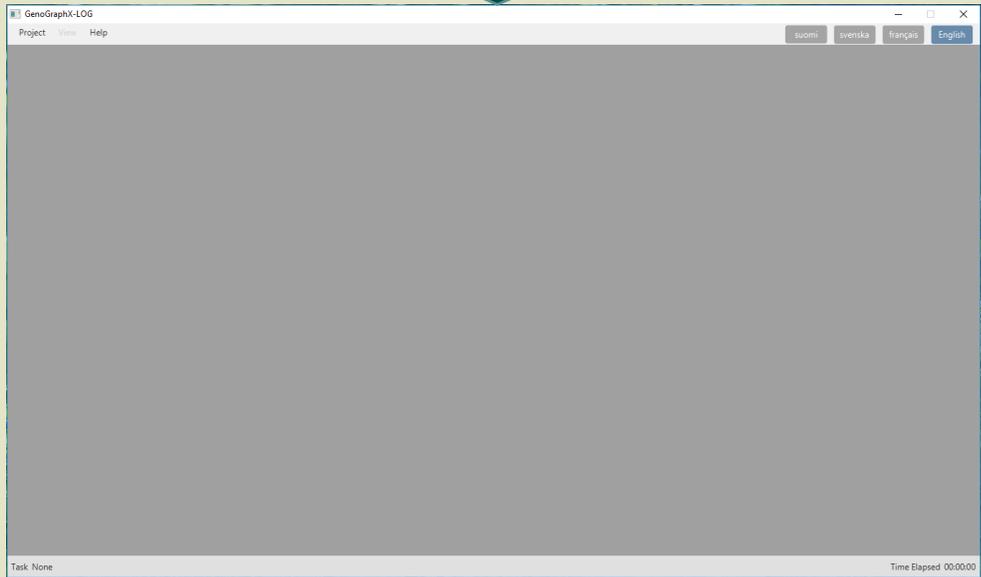
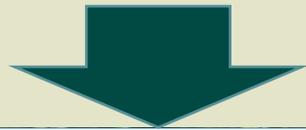
Create a folder on the desktop

- Create a folder on the desktop
 - Click the right mouse button
 - Choose → New → Folder
 - Name the folder e.g. GGXLog Your Name

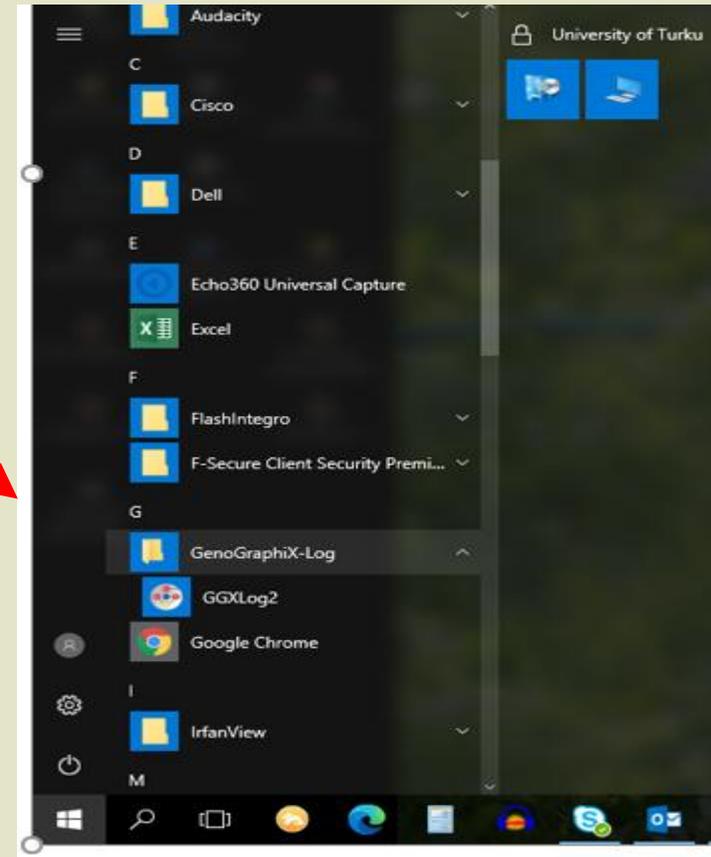


Open the program you have downloaded

1. Search from the list
GGXLog
2. Open it



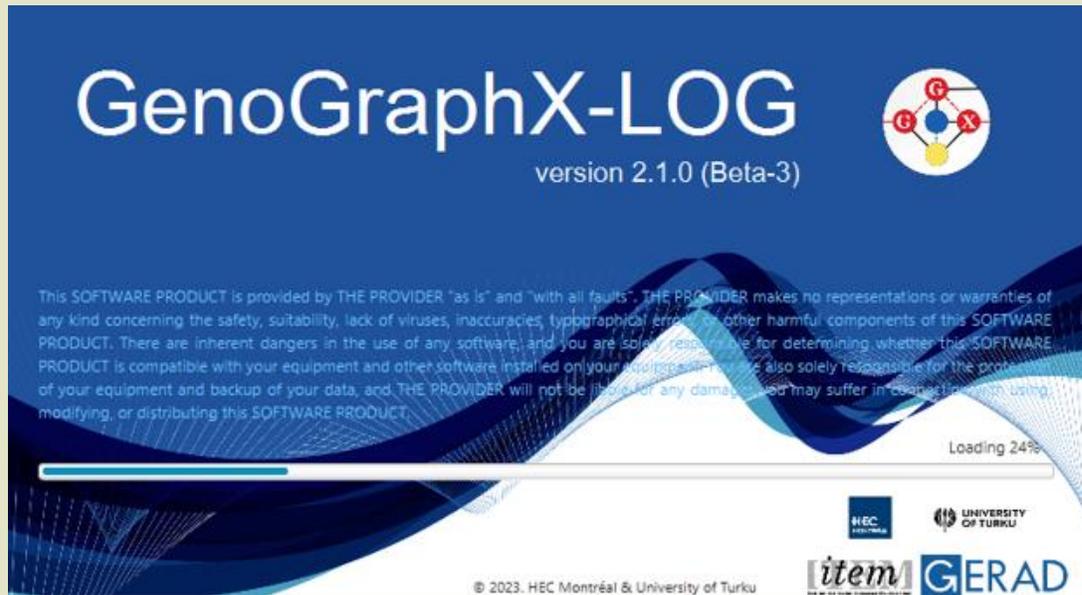
All



GGXLog

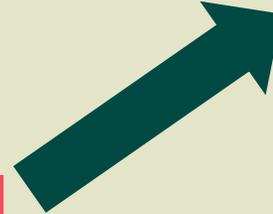


Project → New



Start the program

- Choose Project → New
- Fill the form
- Choose:
 - Project type: **Free writing**
 - Session Length: **Long text**
 - File save → **Browse**
- **& The folder you created on the desktop**
- Fill Informant information
 - First language: Your L1
 - Tested language: **Your L2**
(English, French, Spanish etc.)
 - Tick *I grant consent*
- Press the button *Continue*



The screenshot shows a window titled "Participant Information and Consent Form". It is divided into two main sections: "Project Settings" and "Informant Information".

Project Settings:

- Project type: Free-writing, Translating, Editing Translation
- Session Length: Short Text (Less than 10 mins), Long Text
- File Save Location: C:\Users\ankahin\Desktop\GGXLOG_Etunimi Sukunimi (with a "Browse..." button)

Informant Information:

- First Name: Last Name:
- Age:
- Gender: Male, Female, Not Specified
- First Language:
- Tested Language:

Consent:

By ticking "I grant consent", I hereby authorise the researcher to use the information given above and the data I generate in this programme for research purposes.

I grant consent

Buttons: Cancel, Continue

Write a short text in English (L2)

- Write an argumentative text (max 15 minutes) on the following topic:

What is your opinion on student exchange?

What are the advantages? What are the disadvantages?

- **NOTE!** When typing, do not use shortcuts. Also, do not delete text by painting with the mouse and pressing backspace. Do not delete whole words with a shortcut.
1. Give a title
 2. Start recording by clicking the button *Record*
 3. When you have finished, click *Stop and Save*.
 4. Verify in the desktop folder that you'll find a file with number indicating the date and time "year:month:date:hour:minute:second" (yymmddhhmmss).

Breakout room exercise

Breakout room

Alternative b): Writing a text on a computer & another task

- Use an AI tool (Chat GPT, Copilot etc.) and ask it to do the same task:

What is your opinion on student exchange?

What are the advantages? What are the disadvantages?

- After the task, copy the AI text and make comparisons to your own text.
- What was different? What was similar? Other comments?

Making your own analyses

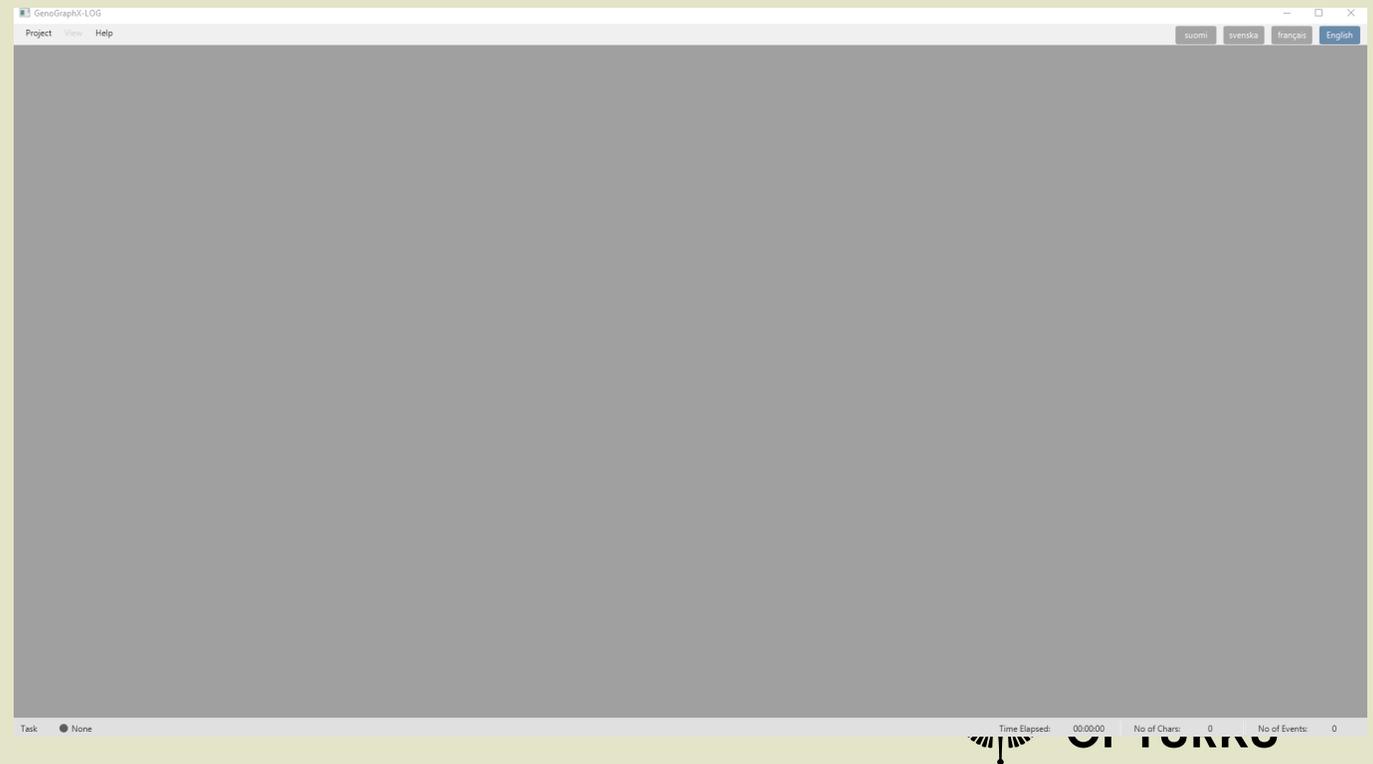
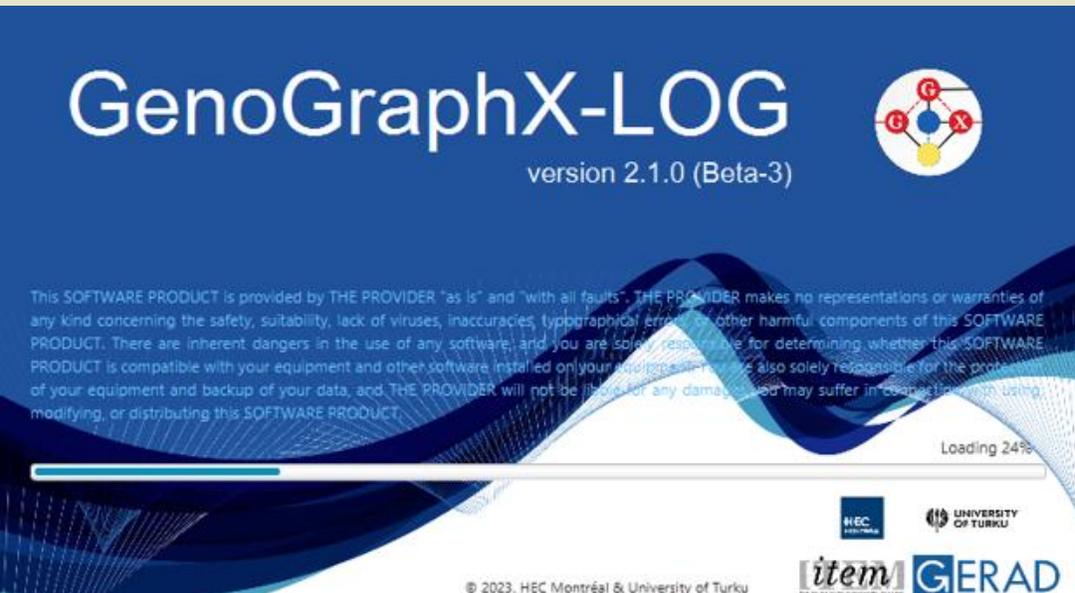
- You have 20 minutes to examine your and the AI's writing processes
- Collect information and prepare yourself to present something to the others in a small group or to the whole group

Main room exercise

How to analyze the collected data?

GGXLog

Project → Open
Desktop → Created folder
→ File → Log file



GGXLog analysis: linear text

The screenshot shows the GGXLog software interface. The 'View' menu is open, and 'Linear Text' is selected under the 'Notations' submenu. The main window displays a session replay with a timeline and playback controls (Start, Slow, Play, Fast, End, Close). A dialog box titled 'Settings to Generate Linear Text' is open, showing various color and timing settings for the linear text output.

Linear Text Settings

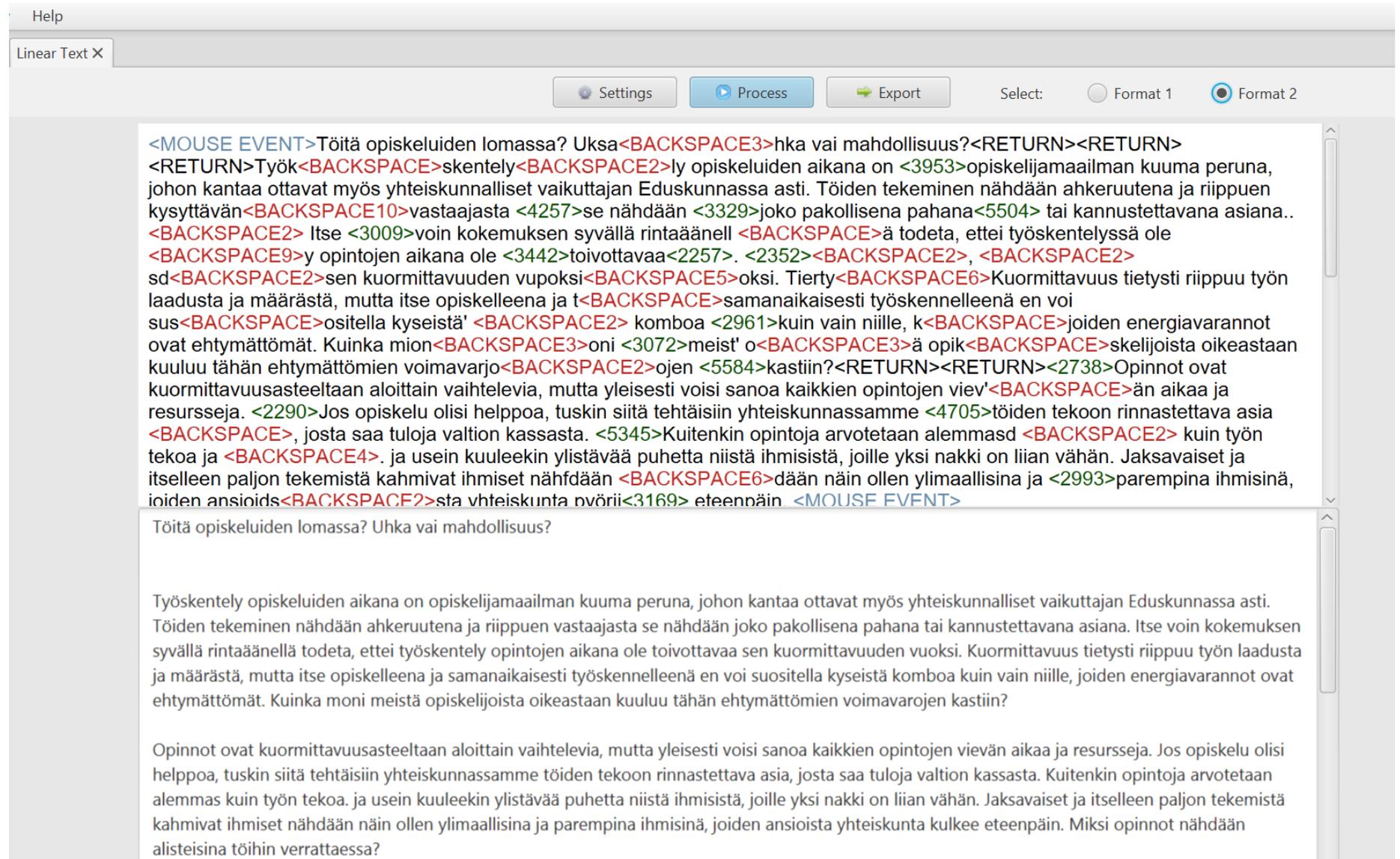
Pause Time (ms):	2000	<input checked="" type="checkbox"/> Show Pauses
Pause Colour:	#0c4e00	
Text Colour:	Black	
Modifier Key Colour:	#8e8883	
Navigation Key Colour:	#5c8100	
Edit Colour:	#bd2d28	
Copy-Paste Colour:	#e25a42	
Mouse Event Colour:	#688bab	Default Colours:

Buttons: Cancel, Save Settings

- Open the log file
- Choose View Notations → Linear text
- Save the linear text setting with ticking the box Show pauses (2000 milliseconds)
- Choose Format 2

GGXLog analysis: linear text

Linear text
above, the
final text
below



Help

Linear Text X

Settings Process Export Select: Format 1 Format 2

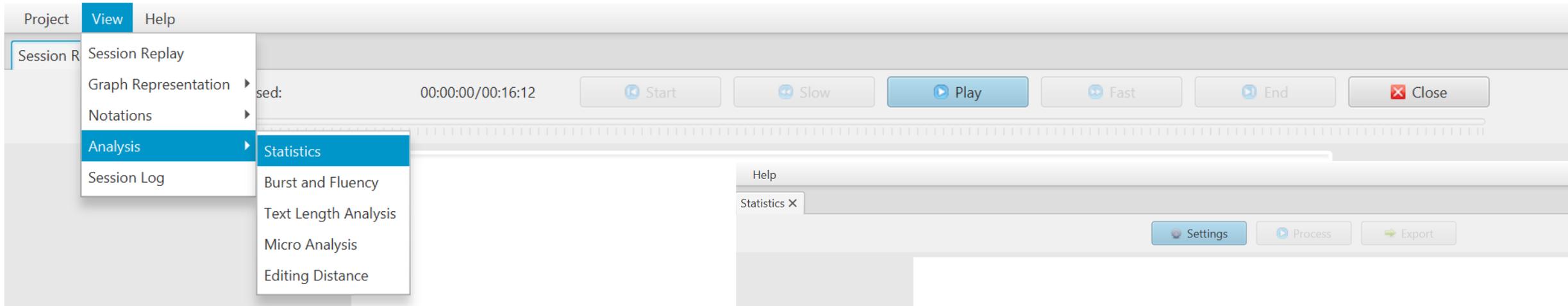
<MOUSE EVENT>Töitä opiskeluiden lomassa? Uksa<BACKSPACE3>hka vai mahdollisuus?<RETURN><RETURN>
<RETURN>Työk<BACKSPACE>skentely<BACKSPACE2>ly opiskeluiden aikana on <3953>opiskelijamaailman kuuma peruna, johon kantaa ottavat myös yhteiskunnalliset vaikuttajan Eduskunnassa asti. Töiden tekeminen nähdään ahkeruutena ja riippuen kysyttävän<BACKSPACE10>vastaajasta <4257>se nähdään <3329>joko pakollisena pahana<5504> tai kannustettavana asiana..
<BACKSPACE2> Itse <3009>voin kokemuksen syvällä rintaäänellä <BACKSPACE>ä todeta, ettei työskentelyssä ole <BACKSPACE9>y opintojen aikana ole <3442>toivottavaa<2257>. <2352><BACKSPACE2>, <BACKSPACE2>sd<BACKSPACE2>sen kuormittavuuden vupoksi<BACKSPACE5>oksi. Tierty<BACKSPACE6>Kuormittavuus tietysti riippuu työn laadusta ja määrästä, mutta itse opiskelleena ja t<BACKSPACE>samanaikaisesti työskennelleenä en voi sus<BACKSPACE>ositella kyseistä' <BACKSPACE2> komboa <2961>kuin vain niille, k<BACKSPACE>joiden energiavarannot ovat ehtymättömät. Kuinka mion<BACKSPACE3>oni <3072>meist' o<BACKSPACE3>ä opik<BACKSPACE>skelijoista oikeastaan kuuluu tähän ehtymättömien voimavarjo<BACKSPACE2>ojen <5584>kastiin?<RETURN><RETURN><2738>Opinnot ovat kuormittavuusasteeltaan aloittain vaihtelevia, mutta yleisesti voisi sanoa kaikkien opintojen viev'<BACKSPACE>än aikaa ja resursseja. <2290>Jos opiskelu olisi helppoa, tuskin siitä tehtäisiin yhteiskunnassamme <4705>töiden tekoon rinnastettava asia <BACKSPACE>, josta saa tuloja valtion kassasta. <5345>Kuitenkin opintoja arvotetaan alemmasd <BACKSPACE2> kuin työn tekoa ja <BACKSPACE4>. ja usein kuuleekin ylistävää puhetta niistä ihmisistä, joille yksi nakki on liian vähän. Jaksavaiset ja itselleen paljon tekemistä kahmivat ihmiset nähfdään <BACKSPACE6>dään näin ollen ylimaallisina ja <2993>parempina ihmisinä, ioiden ansioids<BACKSPACE2>sta yhteiskunta nvörii<3169> eteenpäin. <MOUSE EVENT>

Töitä opiskeluiden lomassa? Uhka vai mahdollisuus?

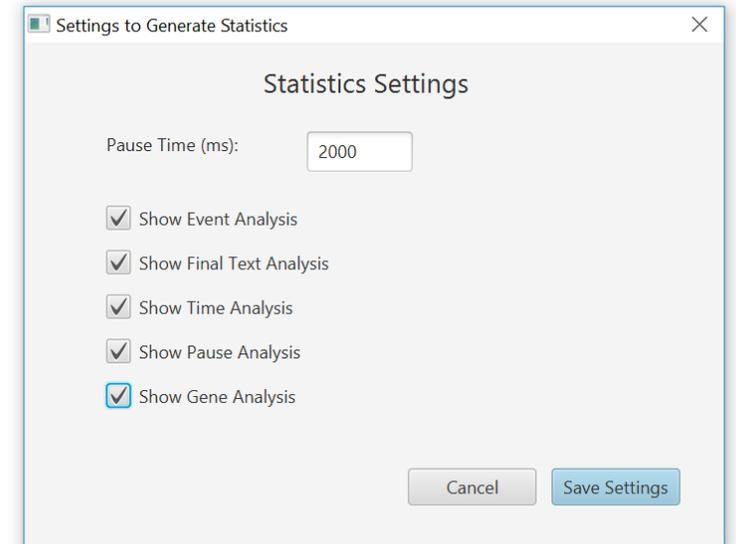
Työskentely opiskeluiden aikana on opiskelijamaailman kuuma peruna, johon kantaa ottavat myös yhteiskunnalliset vaikuttajan Eduskunnassa asti. Töiden tekeminen nähdään ahkeruutena ja riippuen vastaajasta se nähdään joko pakollisena pahana tai kannustettavana asiana. Itse voin kokemuksen syvällä rintaäänellä todeta, ettei työskentely opintojen aikana ole toivottavaa sen kuormittavuuden vuoksi. Kuormittavuus tietysti riippuu työn laadusta ja määrästä, mutta itse opiskelleena ja samanaikaisesti työskennelleenä en voi suositella kyseistä komboa kuin vain niille, joiden energiavarannot ovat ehtymättömät. Kuinka moni meistä opiskelijoista oikeastaan kuuluu tähän ehtymättömien voimavarojen kastiin?

Opinnot ovat kuormittavuusasteeltaan aloittain vaihtelevia, mutta yleisesti voisi sanoa kaikkien opintojen vievän aikaa ja resursseja. Jos opiskelu olisi helppoa, tuskin siitä tehtäisiin yhteiskunnassamme töiden tekoon rinnastettava asia, josta saa tuloja valtion kassasta. Kuitenkin opintoja arvotetaan alemmas kuin työn tekoa. ja usein kuuleekin ylistävää puhetta niistä ihmisistä, joille yksi nakki on liian vähän. Jaksavaiset ja itselleen paljon tekemistä kahmivat ihmiset nähdään näin ollen ylimaallisina ja parempina ihmisinä, joiden ansioista yhteiskunta kulkee eteenpäin. Miksi opinnot nähdään alisteisina töihin verrattaessa?

GGXLog analysis: statistics

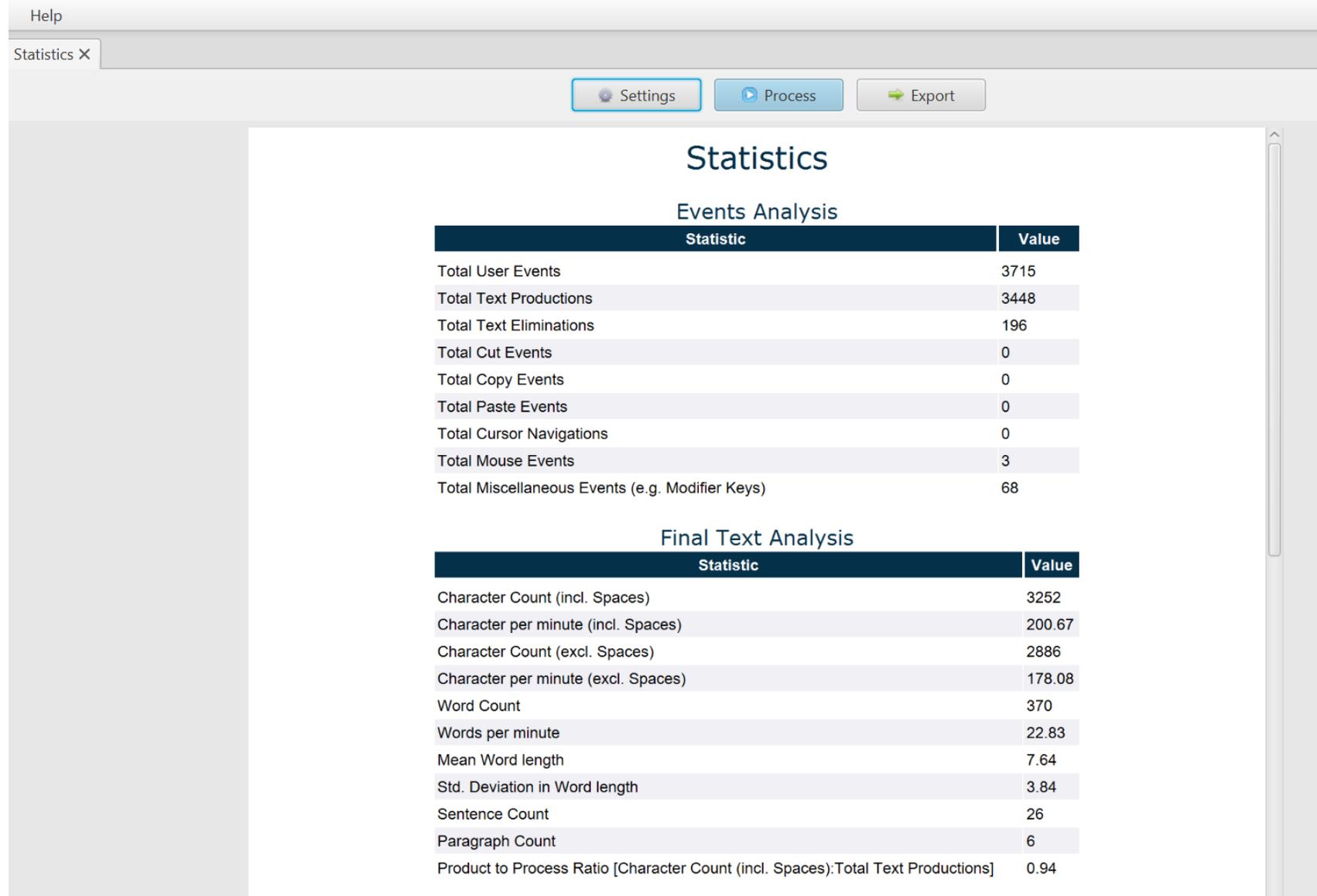


- Open View → Analysis → Statistics
- Choose from the Statistic settings what items you would like to examine



GGXLog analysis: statistics

- Event analysis above,
- Final text analysis below



The screenshot shows a software interface for GGXLog analysis. At the top, there is a 'Help' menu and a 'Statistics X' tab. Below the tab are three buttons: 'Settings', 'Process', and 'Export'. The main content area is titled 'Statistics' and is divided into two sections: 'Events Analysis' and 'Final Text Analysis'. Each section contains a table with two columns: 'Statistic' and 'Value'.

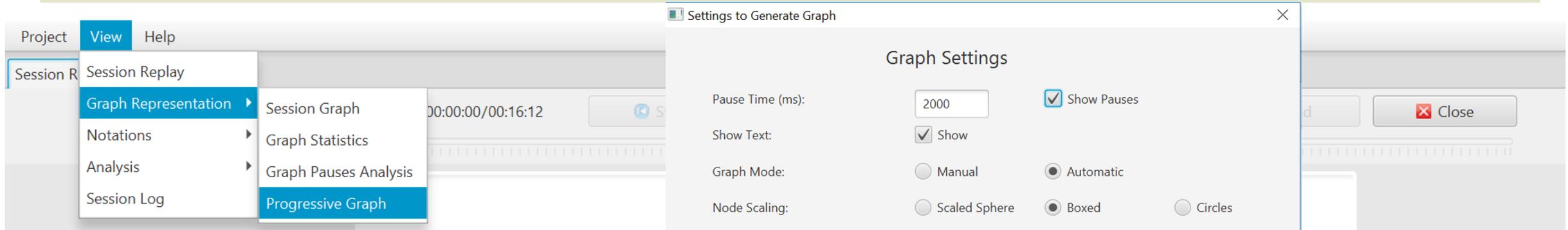
Events Analysis

Statistic	Value
Total User Events	3715
Total Text Productions	3448
Total Text Eliminations	196
Total Cut Events	0
Total Copy Events	0
Total Paste Events	0
Total Cursor Navigations	0
Total Mouse Events	3
Total Miscellaneous Events (e.g. Modifier Keys)	68

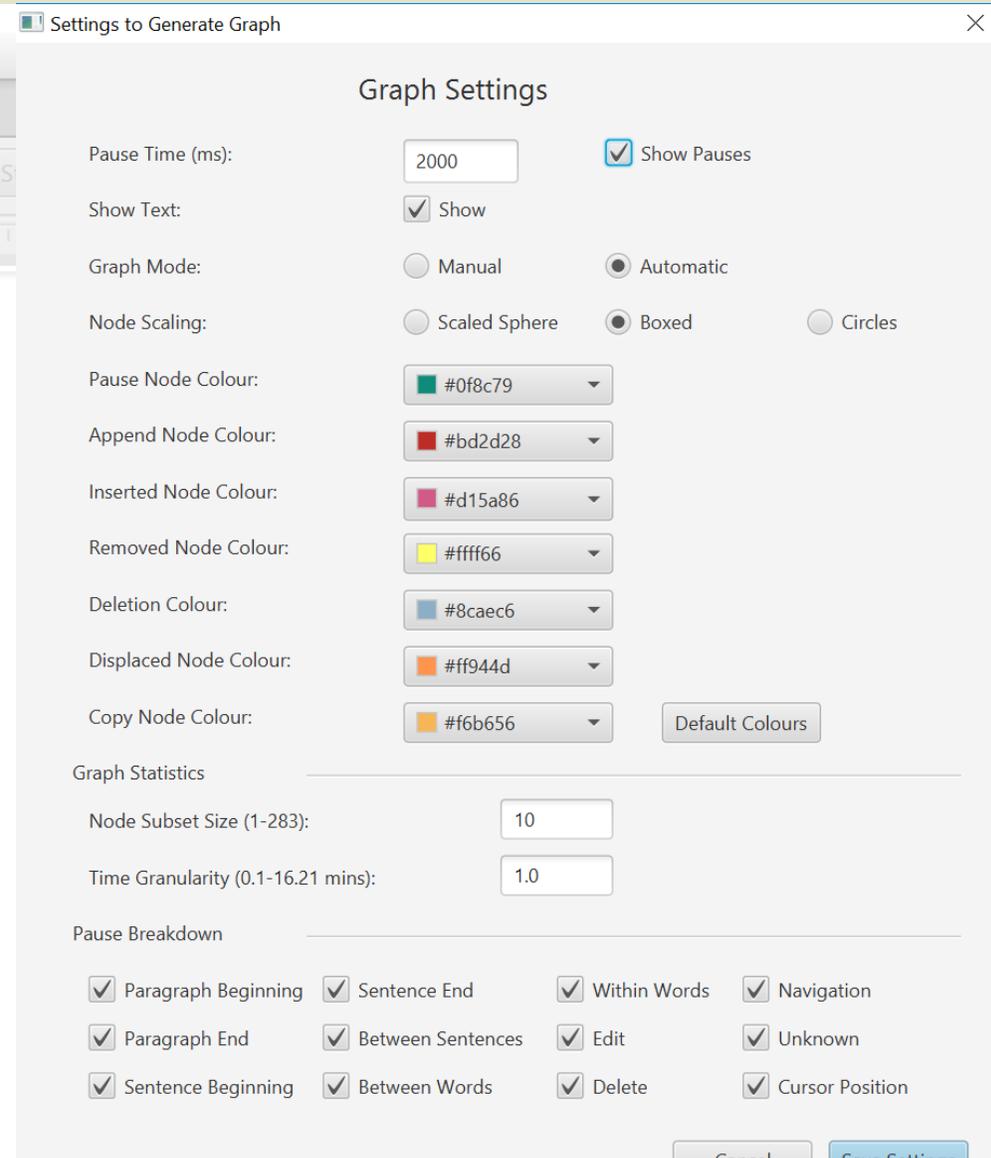
Final Text Analysis

Statistic	Value
Character Count (incl. Spaces)	3252
Character per minute (incl. Spaces)	200.67
Character Count (excl. Spaces)	2886
Character per minute (excl. Spaces)	178.08
Word Count	370
Words per minute	22.83
Mean Word length	7.64
Std. Deviation in Word length	3.84
Sentence Count	26
Paragraph Count	6
Product to Process Ratio [Character Count (incl. Spaces):Total Text Productions]	0.94

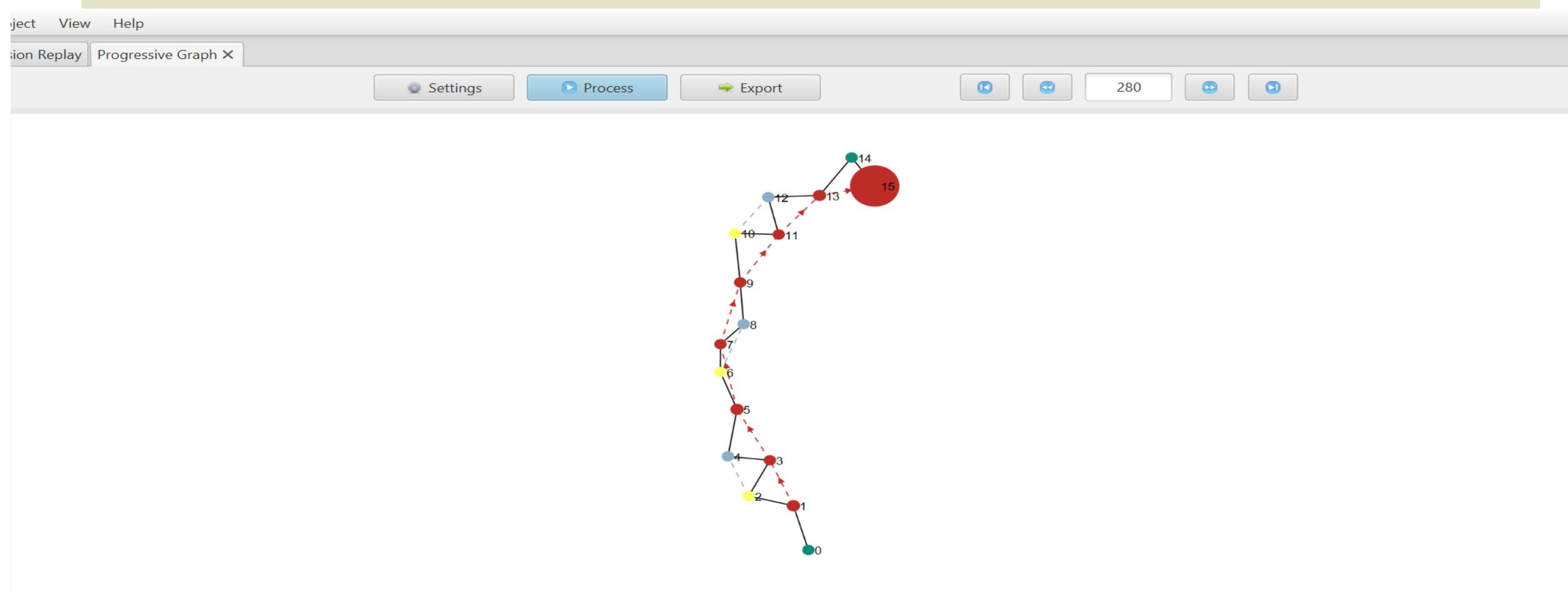
GGXLog analysis: Graph Representation: Progressive Graph (visualization)



- Open Graph Representation → Progressive Graph
- Save settings



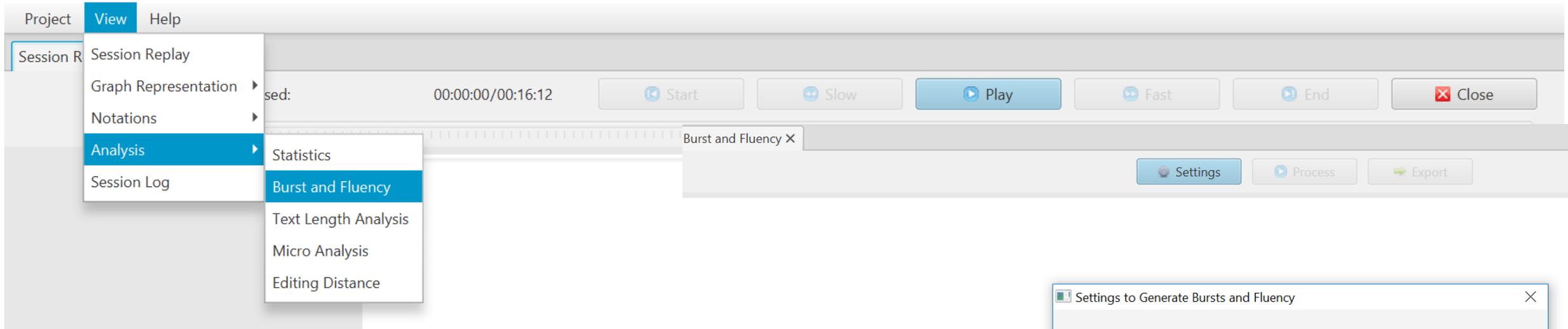
GGXLog analysis: Graph Representation: Progressive Graph (visualization) – Starting profile



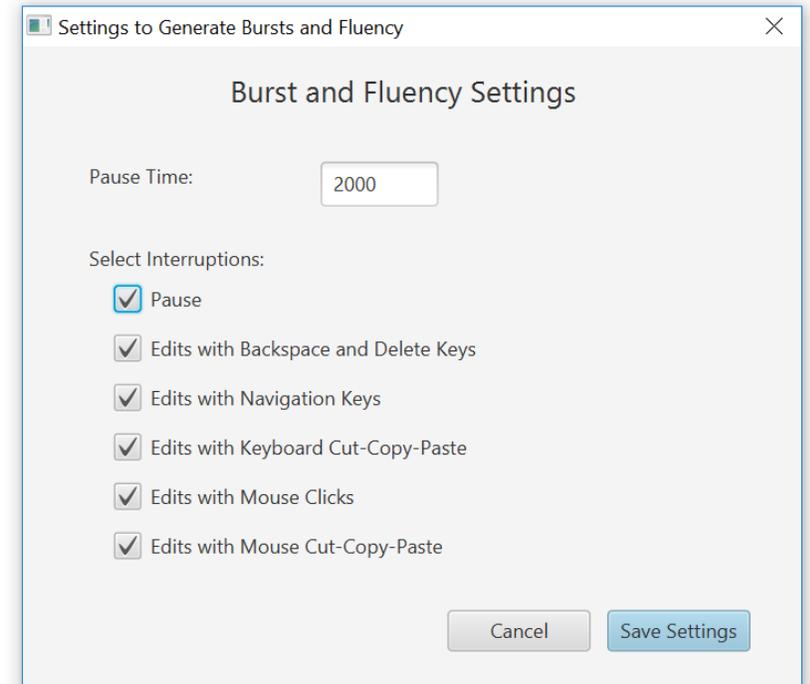
Töitä opiskeluiden lomassa? Uhka vai mahdollisuus?

Työskentely opiskeluiden aikana on opiskelijamaailman kuuma peruna, johon kantaa ottavat myös yhteiskunnalliset vaikuttajat Eduskunnassa asti. Töiden tekeminen nähdään ahkeruutena ja riippuen kysyttävän

GGXLog analysis: bursts



- Analysis → Burst and fluency
- Settings

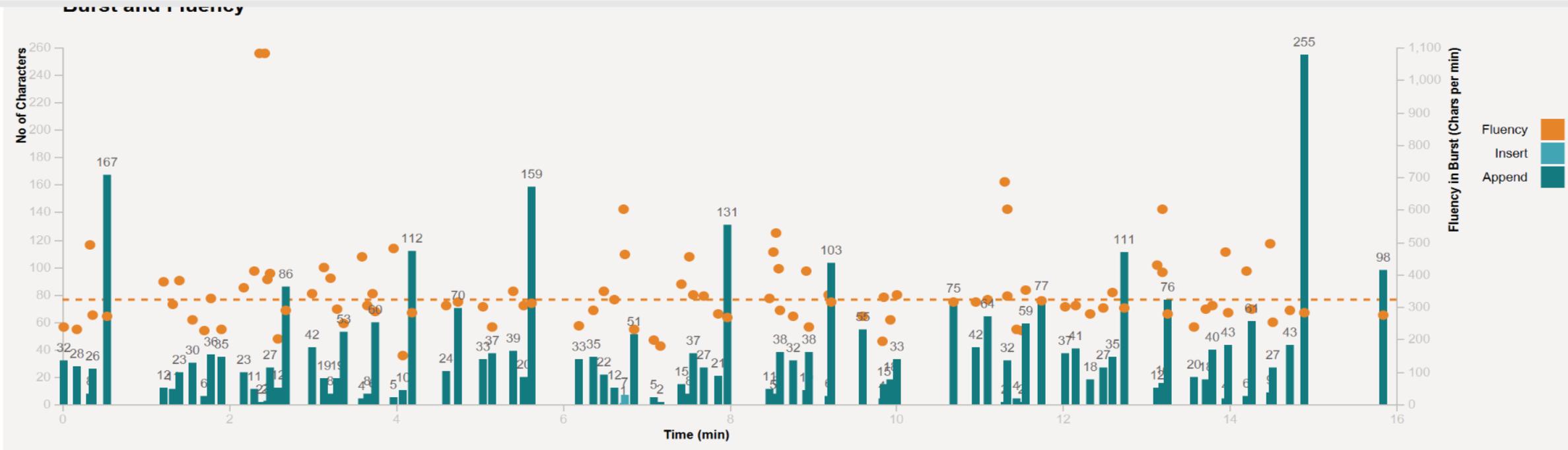


GGXLog analysis: bursts

Project View Help

Session Replay Burst and Fluency X

Settings Process Export



Session Burst & Fluency Parameters

Parameter	Value
Total Burst Count	101
Total Characters in Bursts	3448
Mean of Burst Fluency	346.37 (Chars per min)
10% Trimmed Mean of Burst Fluency	324.26 (Chars per min)
Mean Burst Length (Append)	34.75 Chars
Mean Burst Length (Insert)	4 Chars
Mean Burst Length (Overall)	34.14 Chars

Making your own analyses

- You have 20 minutes to examine your writing process
- Collect information and prepare yourself to present something to the others in a small group or to the whole group

You can study - in pairs



Fluency, i.e. the amount of output, speed, length of pauses



Statistics



Linear text



Pauses in more detail



Uncorrected bursts or cognitive sequences more broadly



Correction and editing in more detail

Reflecting on the writer processes

- Main and breakout room groups
- Write your comments and reflections in the group discussion area



Feedback for the second session



Feedback for the second session

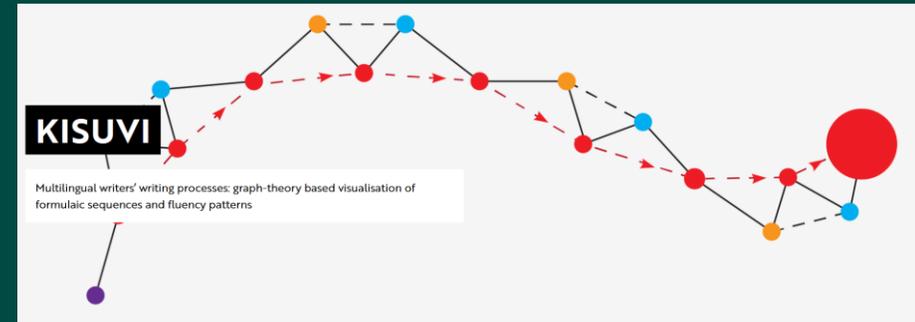
Please write down your feedback concerning the second session.

The feedback is anonymous.

Write your name on the Chat

- Attendance list
- Do not forget to write your name on the chat!

Thank you for
your attention!



Get inspired



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KONE FOUNDATION

maamut@utu.fi

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