



# Student Essays in Times of Generative AI

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In this study, we evaluate two years of experimenting with report writing tasks in the new era of generative AI tools. The goal is to find a new form of teaching the students report writing such that it will be useful in their career where generative AI tools will be a natural part of their work environment.

## Course goals

EH1110 Global Impact of Electrical Engineering (7.5 hp) is an obligatory course that spans over the entire three-year bachelor program in electrical engineering at KTH.

The course was set up in 2013 with the intention to provide the about 240 bachelor students a broad background in electrical engineering. Young students are often not aware of the enormous importance of electrical engineering in today's increasingly digitalized and automatized societies.

An equally important goal in this course is to teach the students scientific writing early on.

## Course structure

**6 semi-popular talks** by university (or KTH) professors and speakers from industry.

**3 essays** about any key technical concept mentioned during the previous two lectures.

Mandatory essay structure:

- Introduction
- Technical development
- Impact on society and environment
- Own opinion about opportunities/ challenges of the chosen technical concept.

**Mentor-led discussion seminars.** Each essay is discussed in groups of 6-12 students led by a senior staff researcher. The senior staff researcher also acts as student mentor and takes questions about studying problems.

## Consequences of generative AI tools

The entire concept of teaching students how to write essays and reports collapsed in November 2022. As soon as chat-GPT became available, many students started using it to skip the painful task to formulate an own essay, and express one's own opinion in writing. Feedback and grading of the essays became pointless.

## Changes in the course-setup

### Year 2023/2024

**Essay 1:** write with paper and pen during 2h supervision

**Essay 2:** write at home with help of chat-GPT

- Mark all text created by chat-GPT in the essay text.
- Add a list of all questions asked to chat-GPT.

**Essay 3:** replaced by a role-play to practice oral argumentation (not evaluated in this study).

### Year 2024/2025

**Essay 1:** write with paper and pen during 2h supervision

**Essay 2:** write at home with help of Chat-GPT

- Appendix I: list all questions to & answers by chat-GPT.
- Appendix II: write 100-500 word reflection about how to use chat-GPT such that the text is your own work.

**Essay 3:** replaced by a role-play (not evaluated here).

## Aim of the study

In this study, we evaluate two years of experimenting with report writing tasks (marked in blue) in the new era of generative AI tools. This is done by analyzing own student surveys from May 2024 and May 2025 that have been set up in Canvas by us course leaders, as well as a teacher (mentor) survey from May 2025.

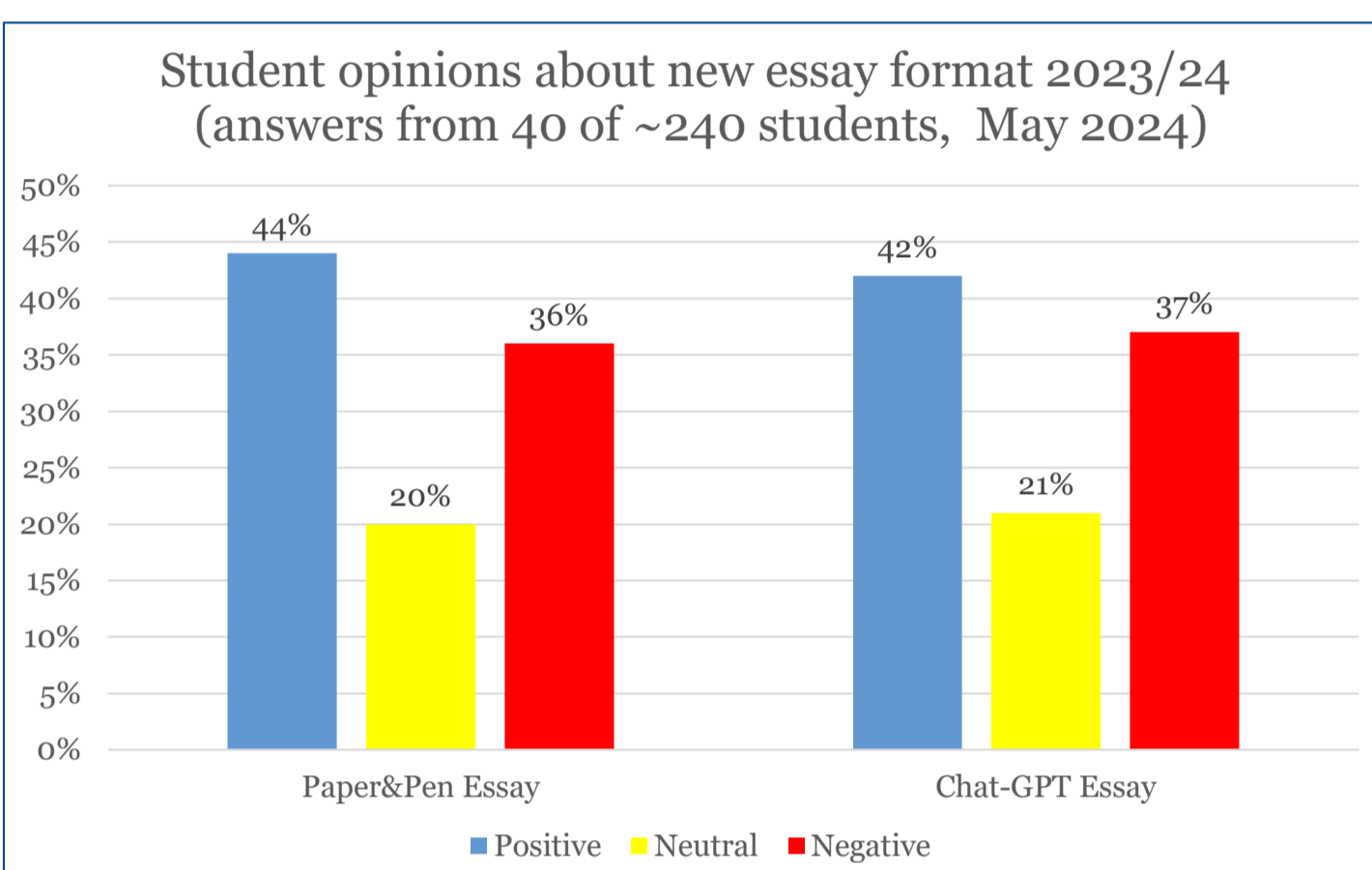
The overarching aim is to find a new form of teaching the students report writing such that it helps in their future work life /research career where generative AI tools will be a natural part of their work environment.

## Contact

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## Evaluation of student survey from 2024

**Paper & pen essay versus Chat-GPT essay**  
(without written reflection about how to use Chat-GPT)

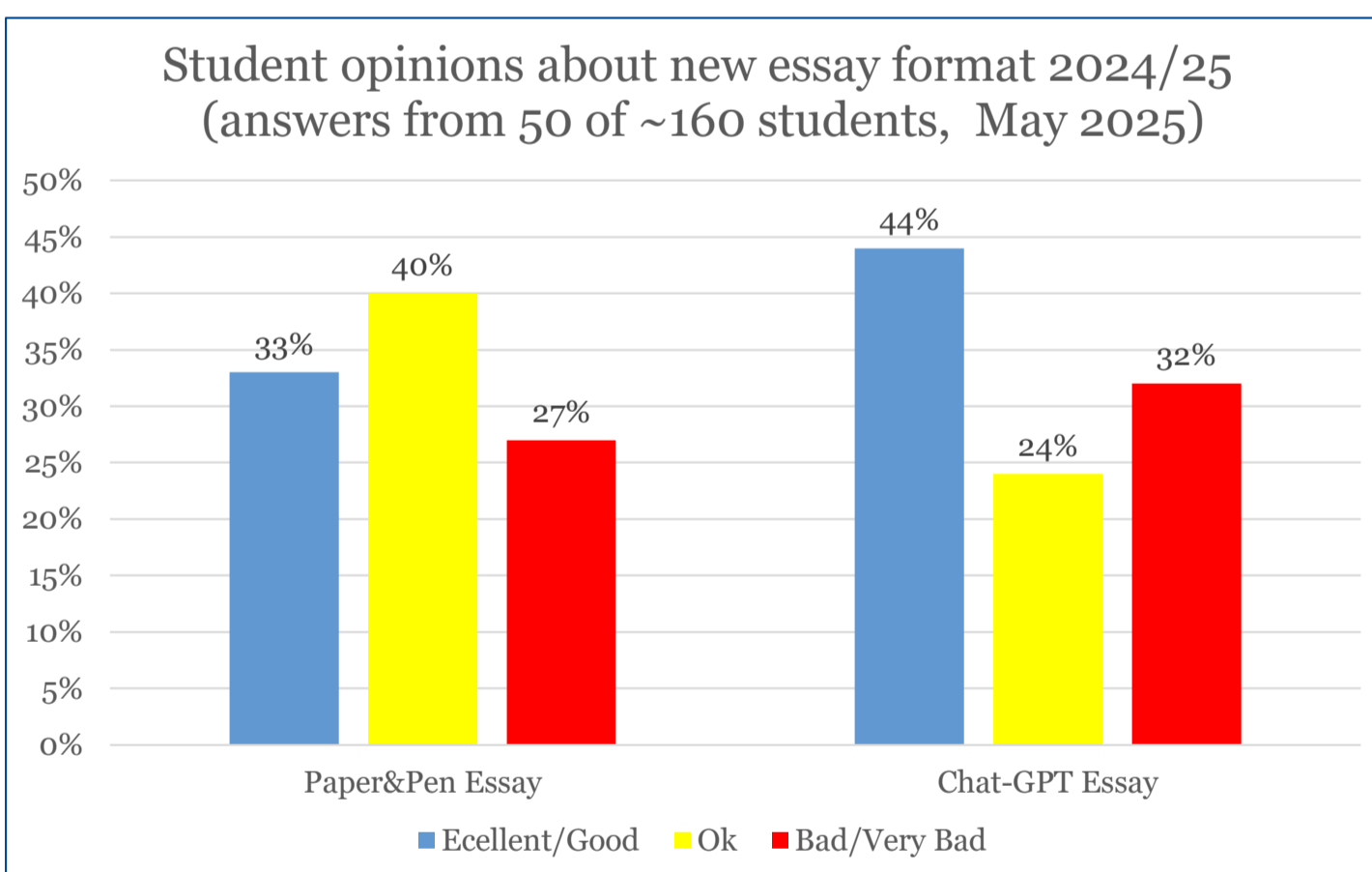


**Student's arguments against paper & pen essay:** writing by hand is outdated, difficult to remember technical details for the text, you can not correct facts/ formulations.

**Student's arguments against chat-GPT essay:** pointless as you do not learn anything, takes no time to produce.

## Evaluation of student survey from 2025

**Paper & pen essay versus Chat-GPT essay**  
(including written reflection about how to use Chat-GPT)



## Paper & pen essay – selected student comments

*-Det var kul att skriva uppsats med papper och penna och dessutom känna att man blev klar med uppgiften inom en satt tid.*

*-Jag föredrar att skriva för hand och finner att det leder till högre nivåer av inläring. Detta handlar mest om att man måste bekanta sig med materialet i förväg och kunna resonera och få ner tankar på pappret.*

*-Uppsatsskrivandet utan hjälpmedel var OK men kändes begränsande utan digitala verktyg.*

*-Det var mycket länge sedan jag skrev en uppsats för hand, och det var inte en trevlig upplevelse.*

*-Jag upplevde uppsatsen utan hjälpmedel som kul men ganska överflödigt eftersom jag tror att papper och penna är ett döende medium i branschen.*

## Chat-GPT essay – selected student comments

*-Att skriva en uppsats med ChatGPT var roligt eftersom jag aldrig enbart använt ChatGPT utan bara som hjälpmedel. Jag skrev inte något själv utan använde bara prompts vilket verkligen satte fokus på Als styrkor och svagheter.*

*-Det jag tyckte var mest värdefullt var att träna på hur man kan prompta chatroboten gärna med så få meddelanden som möjligt. Det vill säga formulera vad det egentligen är vi söker svar på och kanske hitta en intressant vinkel. Jag kunde sedan formulera mina egna tankar utifrån det.*

*-Jag ogillar starkt att arbeta med Chat-GPT och tyckte inte heller att detta var kul men jag förstär poängen. Det är nog en bra uppgift för mig att göra eftersom det tyvärr verkar vara ett verktyg som alla måste lära sig nyttja.*

*-Ofta svårt att få Chat-GPT att skriva det man vill.*

*Jag tycker chat-GPT uppgiften hade kunnat vara bättre om vi hade fått lite mer undervisning om hur det ska användas.*

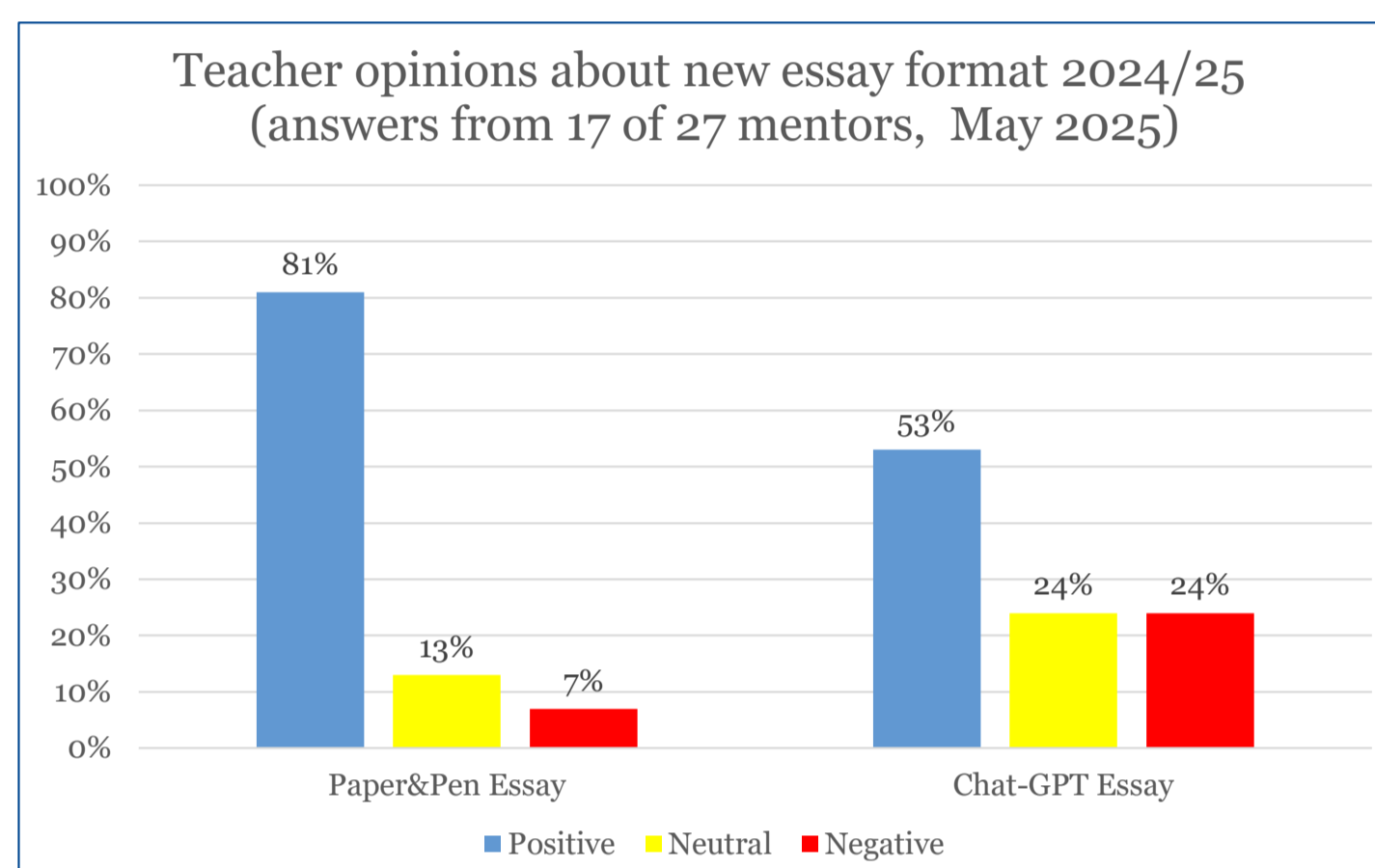
*-Jag tycker att det är otroligt tråkigt att skriva med hjälp av ChatGPT. Det nyttjar inte min inläring alls och otydliga instruktioner gör att nästan ingen ansträngning måste ske för att få poäng.*

*-Skapa uppgifter där ChatGPT inte kan lösa allt automatiskt!*

*-Chat-GPT uppsatsen var den enklaste att skriva såklart men den gav ingenting i läroväg.*

## Evaluation of teacher survey from 2025

**Paper & pen essay versus Chat-GPT essay**  
(including written reflection about how to use Chat-GPT)



## Paper & pen essay – selected teacher comments

*-Good! I like it that they do at least one essay where they definitely cannot use AI.*

*-Själv tycker jag att det var en mycket bra uppgift. Det fick teknologerna att tänka själva och verkligen fundera på vad de kan av egen kraft och vad som bara är upprepning av material ifrån någon annans skrift.*

*-This is a great exercise where the students sweat most but perform best. I think the students experienced deeper learning because they needed to be prepared for the essay writing.*

*-Det är en bra ansats att lära sig skriva och argumentera för ett ämne. Kanske tona ner lite att det är en summering och fokusera mer på att man skall kunna föra argumentation kring ett ämne/en fråga.*

*-The essays read better than expected, but my impression is that this format does not really force students to apply a useful process in the preparation... They do not really survey the topic, and the texts do not have high credibility. Therefore, I do not find it very useful.*

## Chat-GPT essay - selected teacher comments

*-Good! Also useful for me to see how these young guys prepare their prompts. I assume "prompt engineering" is like an art in itself.*

*-Att presentera för varandra hur man promtade fram sin essay var oerhört lärorikt och fungerade mycket bra.*

*-I am fine with this form of assignment but you should consider to rephrase the grading criteria to ensure that students are forced to "Review critically and reflect," "Explain," and "Carry out a limited analysis."*

*-I och för sig intressant format på en uppgift men når inte ända fram.*

*-Most students did not fully use the capabilities of chat-GPT.*

*-In my opinion, this is really not a useful exercise. ....During the mentor meeting it became obvious that most students had no idea what Chat-GPT had written for them. ....they learnt absolutely nothing from the exercise.*

## Conclusions

- A large majority of the teachers, and a small majority of the students like both essay assignments.
- The paper-and-pen essay is highly appreciated among the teachers, less among the students.
- The students are a bit more sceptical about the chat-GPT essay assignment than the teachers.
- Adding a written reflection about how to best use chat-GPT in 2024/25 did not increase the student approval.
- As indicated by many comments from both students and teachers, the chat-GPT assignment needs further adjustment to be regarded as a valuable exercise.

## Acknowledgements

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