Working group on AI tools
Report April 2023

Assignment

According to the Vice-Chancellor's decision (Diarienummer STYR 2023/215, Datum 2023-02-02), a working group[1] was formed in order to:

1. discuss and make suggestions for examination types, examination tasks and examination arrangements that discourage cheating but at the same time are meaningful in relation to the students' learning and development of knowledge, skills and attitudes, not least the ability for critical and creative academic writing.
2. review the university's guidelines and regulations regarding plagiarism and deceptive plagiarism in undergraduate, advanced education level and research level in light of the new circumstances such as AI technology implies.
3. give examples of what ChatGPT (and possibly other AI tools) can do be used in teaching in a way that supports the students' learning and an innovative pedagogy.
4. publish articles, tips and other resources on the issue on the appropriate website and organize seminars/webinars for the university's teachers.

These tasks are addressed in this report and a series of recommendations is provided to the university.

Introduction

Artificial Intelligence (AI) tools which generate content have become widely available since November 2022 and can produce high quality outputs in both written and image form. It is important for universities to consider their approach to these tools, because higher education often tests students' ability to produce similar outputs. There are three important questions to consider in relation to university education:

1) **Educational opportunities:** The potential for these tools to be used to support teaching and learning, which might require changes to course plans
2) **Educational concerns:**
   a. The potential for these tools to replace activities which we consider core to learning about our subjects
   b. The potential for these tools to replace activities which we currently consider core to academic work: to construct arguments, take responsibility for what we write, and to refer to our sources as a central aspect of scientific writing, so that our writing can be used, built upon and criticized by others
3) **Assessment security:** The potential for these tools to be used to replace work which teachers intended students to do, either intentionally or unintentionally, which would require changes to examination outputs and procedures.

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[1] See Appendix 1 for membership

About generative AI and large language models

Generative AI (Artificial Intelligence) is a type of AI that focuses on generating new data or materials, rather than just classifying or processing existing data. Generative AI can generate new data by learning patterns and structures from existing examples and software is available which can generate text, images, and sounds in response to simple prompts written in natural language.

The service that has received the most media attention is ChatGPT[2]. ChatGPT uses a number of *Large Language Models* (LLMs) that are trained on large amounts of text data to predict the next word in a given text-based context at the time of writing [3]. Large language models are suitable for analysing and generating texts in a linguistically correct way, based on a model that has learned patterns from existing examples; these examples are known as the training data. In 2022/2023, new variants of generative AI were made available that were significantly better than before, so good that their use has become a major issue for higher education worldwide.[4]

Development is advancing rapidly, making it difficult to strictly define what large language models can and cannot do, and meaning that universities must keep the topic under regular review as the technology progresses. The potential uses and benefits of generative AI depend on the subject area as its ability to generate answers or information is entirely dependent on the quality of the data the models are trained on, and the algorithms used to handle and produce answers. This means that there are certain topics or areas that generative AI may not be as good at as others.

Large language models treat all information in the same way: for instance, they do not recognize questions which are absurd or cannot be answered, and can produce plausible and well-written answers which make no sense to a human, or are completely false. The confabulation is particularly problematic, as students may have false trust in the output from the tools[5], and from an academic skills perspective, at the time of writing, the most common major language models are also unable to properly reference sources[6]. The output is not always easily verifiable, it does not always provide sufficient information or grounding for academic texts, and it does not provide appropriate acknowledgement of the work of others. However, this is something that may change in the near future.

Their training using existing language data can mean that a generative AI tool will reproduce dominant discourses and present common myths or stereotypes as truths, since they are

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[2] ChatGPT is owned by OpenAI, a large US company. Accounts are free (limited use) or paid for (more reliable access and unlimited use) https://chat.openai.com.

[3] March 2023.

[4] Se bl.a. Jürgen Rudolph, Samson Tan, och Shannon Tan, "ChatGPT: Bullshit spewer or the end of traditional assessments in higher education?", *Journal of Applied Learning and Teaching* 6, No. 1 (2023): 3–4, 11–13.

[5] Jonathan Turley's experience of a very serious falsehood produced by an AI tool: "Defamed by ChatGPT"

[6] Se bl.a. Luke Munn, Liam Magee, och Vanicka Arora, "Truth Machines: Synthesizing Veracity in AI Language Models", *arXiv preprint arXiv:2301.12066*, 2023, 2–4.

often strongly represented in the information it is trained on[7]. Whilst currently available tools are provided with 'guardrails' which exclude certain types of discriminatory, offensive or illegal outputs. these guardrails are not regulated. The user is not provided with information about how training material has been selected, and there is also potential for the training material to be deliberately chosen to present a particular perspective.

The use of huge volumes of training data accessed from the internet may present many issues about the use of personal data and copyrighted materials. OpenAI is already effectively unavailable in Italy due to regulatory questions[8] and Microsoft is facing a class action lawsuit in relation to copyright[9] because of the lack of transparency on the training materials. These issues are likely to get more serious in the short term, and the university should be careful about purchasing or recommending software use while these challenges remain, explaining the limitations and potential difficulties to students and staff.

The development of generative language models is in an early phase. Recent developments are characterised by an increased diversity of different forms of language models. It is important that the university does not focus solely on ChatGPT. There are and will be many other and perhaps better AI tools, and the landscape is changing rapidly. We will refer to 'generative AI tools' in order to keep the report sufficiently broad, and to distinguish the discussion from software which also uses AI tools but which is already in use in the university (such as Grammarly, Google Translate, Office 365 automations, and so on).

The commercial packaging of generative AI products will also vary – probably in the form of free services based on advertising financing, but also pure payment services. An important broader issue concerns the accessibility of these services, where a future scenario is that students with greater purchasing power can have access to more powerful language models than less affluent students.

A more constructive and forward-looking way than, for example, designing policies around use is that questions about examination and assessment are prioritized through a lively discussion for increased assessment literacy that enables the university to meet a range of challenges in a changing society, ensuring that the university maintains equitable access and legal compliance.

Educational opportunities and challenges

The availability of AI tools will make information, task processing and examples of arguments more accessible to students outside of their classrooms. This provides an opportunity to rethink what happens in the classroom. We still expect students to develop skills in analysis, synthesis, problem-solving, communication, creation, and teachers are still needed to provide expertise in managing the material, to structure this work, to scaffold the learning by making tasks progressively more difficult, and to create an environment where students can learn effectively and to evaluate the outcomes. What can AI tools do to assist this process, perhaps enabling teachers to spend more time on formative assessment,

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[7] Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). *On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?* Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, Virtual Event, Canada. https://doi.org/10.1145/3442188.3445922

[8] ChatGPT Has a Big Privacy Problem (Wired magazine)

[9] The current legal cases against generative AI are just the beginning (TechCrunch news site)

personalisation of tasks and mentoring students? This will be an ongoing consideration for the university's learning and teaching units.

In some subjects, strong arguments will be made for students to undertake 'apprenticeship' in the skills of the subject, such as academic writing, experimental design or language development. The existence of a tool which can do these activities efficiently may not replace the need for students to develop these skills, and this argument will need to be made to students, with clear indications of what is expected and how we support the process and verify their competences. The decisions about this work must be made subject by subject, with support from the university's learning and teaching units.

The working group has kept colleagues informed via a series of well-attended webinars and the publication of a series of films and webpages have been produced; a series of future resources is also proposed using the work already completed by the working group for which there was not sufficient space in this report[10]. In addition, the working group has produced a series of questions for the university to keep under review[11].

Cheating and assessment security

The working group was asked to review the university's guidelines and regulations regarding plagiarism and deceptive plagiarism in undergraduate, advanced education level and research level in relation to these generative AI tools.

The term "cheating" lacks a legal definition in higher education law, but the Higher Education Ordinance punishes deceptive cheating through disciplinary measures such as a warning or suspension against students who attempt to deceive during exams or when other study performances are to be assessed[12]. Plagiarism is a common example of cheating.

The use of generative AI tools such as ChatGPT can sometimes fall within the definition of plagiarism, but it is not always clear whether the use of such tools constitutes deceptive plagiarism. Regarding generative AI tools, the starting point for a case should be whether the student used the tool with the intention of deceiving and/or whether the student used the tool despite realizing the risk that its use could be misleading.

Generative AI tools are trained on large amounts of text created by humans and can therefore reuse or rework parts of these texts. This means that an AI-generated text may contain paragraphs that resemble or are identical to previously published material, which can lead to the student's work being perceived as deceptive plagiarism. In addition, the AI tool may fabricate references (citations) to non-existing sources.

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[10] See Appendix 2 for the list of resources already produced and under development

[11] See Appendix 3 for these questions

[12] 10 hood. 1 § 1 pc. 1 and § 2 1 st. Higher Education Ordinance (1993:100).

Students are responsible for all material they submit for examination.[13] This includes content in the form of text, programming code, graphic representations, and similar material generated with AI-based or non-AI-based tools. Consequently, students are expected to be able to explain, argue for, and defend the above material that they submitted for examination. Submitting an AI-generated text that gives the appearance of other people's work being the student's own, or that contains fabricated citations, can be considered misleading under the Higher Education Ordinance if the student is aware of the risk and still chooses to submit the text. However, it can be difficult for the individual student to detect or control whether AI-generated text contains such passages, even if the student is aware of the risk.

It is important to be clear about what is allowed and not allowed regarding the use of generative AI tools, as well as what should be assessed and graded in connection with examinations. In some cases, it may be misleading to use generative AI tools, while in other cases, where legitimate use of AI-based tools can be ambitious and relevant to the task, it will be necessary to provide additional, extra clarification on what is expected of students.

There are services, AI detectors, that are said to provide an indication of the likelihood that a certain text was authored by, for example, GPT-3. However, it is difficult to assess the reliability of such services, and it is likely that a result from such a service is not sufficient to prove that a student used a generative AI tool to generate a submitted text.

It is important to ensure that the use of generative AI tools or so-called AI detection services does not involve personal data that can be attributed to an individual, or that the use of the tool does not lead to the transfer of personal data or copyrighted material to third parties, in violation of data protection or copyright law. Departments and teachers need to be made aware of these risks and inform students how they can use AI tools safely while respecting data protection rules.

Examination elements where students can use AI-based tools in ways that (in a not insignificant way) jeopardize the reliability of the elements as an assessment tool may need to be supplemented with, or replaced by, other forms of examination.

Recommendations

Working with existing expertise in the pedagogical units, legal department and faculties, the university should:

1. Keep the use of AI tools in education under regular review. *Rådet för universitetsgemensam högskolepedagogisk utveckling* should take overall responsibility for these questions, and commission *Avdelningen för Högskolepedagogisk Utveckling* (AHU) and *Enheten for Undervisningsstöd* (EUS) to report back regularly on issues,

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[13] This responsibility must primarily be seen as a (scientific/content-wise) quality responsibility in relation to the assessment of the task itself. The responsibility does not mean that a student who e.g. submits a group assignment for examination can always be subject to a disciplinary sanction by the vice-chancellor or the disciplinary board for any proven plagiarism by other group members, regardless of whether the student knew about the plagiarism or not. Here, the responsibility thus differs from what may be considered liability for misconduct in research or other deviations from good research practice.

recommendations, and progress. These reviews should cover educational opportunities and concerns, and assessment security. [Ongoing]

2. Provide clear communications to students and staff about the challenges and benefits of using AI tools in education [*Ongoing: many resources already available[14]*].

3. Provide draft policies for departments[15] *[to be completed by 1 June 2023]*.

4. Develop guidance for examination which may be susceptible to use of AI tools which is unintended by the teacher and ideas about how to ensure safe and fair examination where AI tools could be used *[Ongoing, to be completed alongside the Academic Integrity project materials]*.

5. Develop guidance for the board of discipline to ensure that all members understand the use and misuse of AI tools in relation to possible academic misconduct [*complete[16]*].

6. Provide and maintain generic guidance for teachers on the review of approaches to teaching and examinations in relation to the availability of AI tools *[complete]*.

7. Provide templates for teachers to adapt and use in information about various examination and assessment situations *[under development, to be completed by August 2023[17]]*.

8. *Provide clear guidance for decisions in relation to technology use by students and technology purchases on behalf of the university. In relation to this, consider the formation of a council of experts as a support and reference group for decisions and path choices in relation to technology use/purchases, including expertise in e.g. ethics, law, pedagogy, administration, technology, critical studies of technology, etc. [no current work ongoing – requires discussion at UN]*

9. NOT change the definition of plagiarism in the existing regulations, but consider an appendix to cover the unauthorised use of AI tools. *[Ongoing, to be completed alongside the Academic Integrity project materials]*.

10. NOT attempt to ban the use of AI tools or to rely on technologies which purport to detect the use of AI tools, unless a national policy is implemented or a future working group reviews these in more detail and recommends them. *[No action required]*

Course supervisors and directors of study should:

1. Review the guidance provided by the university and participate in education on the use of AI and other tools to generate content. This may include seminars, workshops and other training sessions offered by the teaching and learning units to provide a better understanding of how these tools work and how they can be used ethically and responsibly.

2. Consider whether changes to learning outcomes, curricula, examination approaches and grading criteria may be needed due to the availability of AI tools, seeking help from the teaching and learning units as needed.

3. Ensure there is clear communication to staff and students about allowed and prohibited AI tools. Inform students about which AI tools, if any, can be used in tests and assignments and why certain academic activities are required, such as learning to write

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[14] See Appendix 2 for the list of resources already produced and under development

[15] See Appendix 4 for examples from the Informatics department and IIIEE

[16] See Appendix 6 for detailed advice by Lehman Benson (in Swedish)

[17] See Appendix 5 for examples from IIIEE and Medical Physics

in a certain style themselves and taking responsibility for their own ideas and constructions. Be clear about what is expected of the students, what intended learning outcomes are evaluated by examinations and assignments and according to what criteria these are assessed and graded.

[These recommendations for course supervisors and directors of study will be implemented at faculty level, but a web page will be provided with relevant links by 1 June 2023.]

OBS: Whilst some of these recommendations may apply also to research activities, the working group recommends that the Research Board reviews these independently and makes any additional recommendations needed in relation to research processes and ethics.

Appendix 1: Working group membership

Sammankallande: Universitetslektor Anders Sonesson, Högskolepedagogisk utveckling (AHU)

Medarbete från Avdelningen för Högskolepedagogisk utveckling (AHU): Johanna Bergqvist-Rydén

Medarbete från Centre for Engineering Education (CEE): Sandra Nilsson

Medarbete från Medicinska fakultetens Centrum för Undervisning och Lärande (MedCul): Johann Agardh

Medarbetare från Enheten för undervisningsstöd, Lotta Åbjörnsson och Nathalie Stenbeck

Johanna Alhem, Avdelning Juridik

Studierektor Björn Svensson, Institutionen för informatik

Universitetslektor Markus Lahtinen, Institutionen för informatik

Universitetslektor Elin Bommenel, institutionen för tjänstevetenskap,

Projektledare Rachel Forsyth, avdelning Utveckling,

Studentrepresentant Alva Söderbäck

Appendix 2: Resources already developed or to be developed to support the recommendations

Web-pages and guidance

Published:

[Det finns ett före och ett efter ChatGPT](#)

[Projekt kring fusk ska hjälpa lärare examinera rätt](#)

[The potential impact of AI tools on assessment](#)

[Questions and answers about AI tools](#)

Under development or future:

How can ChatGPT and similar tools be used in teaching?

Cheating and cheating prevention

Guidance for examination instructions

Guidance for board of discipline

Guidance on departmental policy

Metacommunication with students

Video examination

Oral examination

Authentic assessment

Filmer

[Filmer om AI i undervisningen](#)

- AI-tools, assessment and levels of understanding, 15 min

- Technical aspects of AI-tools, 19 min

- Why do students cheat? 18 min

- Expert comment about ChatGPT with Björn Svensson at Department of Informatics at Lund University School of Economics and Management (LUSEM), 7 min

- Ethical issues for AI tools on assessment at Lund University, 8 min

- Take home exams, 7 min

- Is ChatGPT an academic source? Fredrik Eriksson from the Libraries of the Joint Faculties of Humanities and Theology (17 minutes)

Webinars January-March 2023

Webinar participation: 485 individual Zoom users at 7 different webinars (total attendance 634; some people attended more than one session).

20 januari kl. 13-15: [Handling the impact of AI tools](#)

31 januari kl. 13-15: Hantera effekten av AI-verktyg vid bedömning vid LU

10 februari kl. 13-15: Handling the impact of AI tools – Educational possibilities

14 februari kl. 10-12: Handling the impact of AI tools – Technical aspects

7 mars kl. 13-15: Handling the impact of AI – Try out ChatGPT

17 mars kl. 10-12: [Handling the impact of AI – Technical aspects](#)

27 mars kl. 13-15: [Handling the impact of AI – Discipline-related aspects](#)

Appendix 3: Questions to keep under review

Many questions are raised, and they should be kept under review by *Rådet för universitetsgemensam högskolepedagogisk utveckling*. We suggest that responsibility is shared between AHU and EUS to report to HR on issues, guidance, and training relating to these questions each semester.

1. How should learning outcomes be interpreted in relation to the new conditions that AI tools bring? What do we really want students to learn, and what do the learning outcomes assume that the students must be able to do even though the AI also "can"?

2. Should learning outcomes be changed to take into account the new conditions that AI tools bring? What do we want students to show that they have learned within the framework of their programmes?

3. How can examination elements be designed so that they can form the basis for assessment of the intended learning outcomes in the most effective way possible (taking into account the questions in the point above)?

4. Existing, simpler, AI tools such as Grammarly and Hemingway et al. are already used in many departments at LU and have not generated so much concern or discussion. How do departments decide which AI tools may be used in which situations? What are the legal, economic, ethical and equity issues which should be considered before purchasing or recommending these tools for use in the university?

5. What should be communicated to students (at both undergraduate and postgraduate level) about originality, recognition and other (partially) copyright/intellectual property issues, as well as about equity, ethics and academic honesty?

6. How can the university work for faster adaptation of – and greater flexibility in – the overall work on the impact of new digital tools on teaching in the future?

Appendix 4: Departmental policy examples

4a: Department of Informatics Policy on use of Artificial Intelligence-based Tools in Education

2023-03-06 POLICY Department of Informatics Education Committee Reg. no: STYR 2023-661

The Department of Informatics recognises the rapid increase in the use of AI-based tools in the field of information systems, in related disciplines, and in society at large. We recognise that these tools are likely to remain accessible to students. To ascertain that the tools are used responsibly, ethically, and in ways that promote and accelerate student learning while safeguarding examination by working to deter cheating, we have developed this policy.

The Department of Informatics maintains that course learning outcomes in the courses that we teach have not become less relevant with the emergence of AI-based tools. On the contrary, their relevance has increased as the use of AI-based tools requires a command of terminology needed to write prompts and subject-specific knowledge combined with the ability to critically assess, judge, analyze, and evaluate AI-generated output.

1. Purpose
The purpose of this policy is to provide guidelines for teaching staff at the Department of Informatics regarding examination in a time of easy access to AI-based tools. The policy shall provide guidelines on informing students about AI-based tools and on the use and integration of AI-based tools into teaching.

2. Scope
This policy applies to courses in first- and second cycle education at the Department of Informatics

3. Policy Statement

The Department of Informatics recognises the potential benefits of using AI-based tools in education to enhance students' learning and learning experiences. The department therefore encourages the responsible and ethical use of AI-based tools in courses.

- All teaching staff should familiarise themselves with some AI-based tool (for example, ChatGPT or Bing AI) to see how it responds to using course materials, assignments, exam questions and so forth as prompts.
- Any and all use of AI-based tools in teaching should be subordinated to the learning outcomes of the course. The use of AI-based tools must be a means to an end, with the end being fulfilment of course learning outcomes, and not become an end in themselves unless the learning outcomes specifically mention such AI-based tools.
- All group assignments should include some instrument, such as an author contribution statement, for students to account for distribution of work between humans and AI. Our referencing systems (APA, Harvard, etcetera) do not support referencing content generated by AI-based tools. This is due to the fact that AI-generated content itself can contain in-text citations and bibliographies. Thus, students should be given the opportunity to report their own contributions to a given work, as well as the contributions made by AI.
- Course directors should communicate to students that they are always responsible for, and have personal ownership of, everything that they submit as a part of examinations on courses. This includes content in the form of text, programming code, graphical representations, or otherwise, generated using AI-based and non-AI-based software, and that they can be asked to explain, justify, or defend any of the above in conjunction with examination.
- Written submissions, where students can use AI-based tools in such a way that it can affect the validity of the examination, should be augmented by complementary means of examination.

4b ChatGPT guidelines for IIIEE educational activities

Version: April 2023
Below has been developed based on the series of webinars "Handling the impact of AI tools" organised by Lund University in January – March 2023. Please note that the content will be very likely updated based on, among others, the development of LU-wide guideline on the same, further development of the AI tools and others.

General advice regarding ChatGPT and other AI tools

Given that AI tools such as ChatGPT have become available to most teachers and students internationally, and are likely to become even more sophisticated and accessible (by being integrated into commonly used softwares such as Microsoft Word and Google Docs), all teachers are encouraged to

- familiarize yourself with ChatGPT. Create an account, and explore how the bot might impact your course(s) and assessment(s) by e.g. giving ChatGPT some of your assignments as prompts and see what comes out of it.
- think about how tools like ChatGPT can support or reduce the achievement of learning outcomes in your course(s), and in the case of reduction, actively communicate to the students the reasons why it is important not to use ChatGPT-like tools in carrying out their tasks (e.g. development of their skills in structuring their argument logically)

- expect that students use AI tools, and thus make deliberate and well-communicated decisions to the students on how (if at all) they should use them, or if restricted, on which occasions they should not use them, in your course(s)
- discuss with colleagues about what role AI tools might play for the discipline of environmental management and policy specifically.
- Please note that currently (April 2023), it is not possible to require students to use ChatGPT, since uncertainties remain regarding GDPR implications and since it cannot be guaranteed that all students would be able to create an account (the capacity of the free service is limited). However, if you consider encouraging your students to use ChatGPT, you are advised to talk to Johanna Alhem (at the legal department) to learn what legal aspects you possibly need to consider: johanna.alhem@legal.lu.se

Implications of AI tools on assessment at the IIIEE

The emergence of AI tools has potentially a big impact on assessment, depending on the form of the assessment. If the mode of examination is to put together texts, such as essays and take home exams, this no longer works as a proxy for measuring the students' skills, knowledge and judgment, and the examination must be restructured. Below follows some critical issues to consider with regards to the different forms of assessment at the IIIEE, as well as to referencing, detector tools, and cheating.

Written exams
- Take-home / open book exams: Avoid this type of assessment if possible. If not, base the exam on applied, real-life cases such as those brought up in class, to make it less useful for students to use AI tools such as ChatGPT
- Supplement the written assessment with a short oral examination.
- Closed book exams
- Multiple choice exams, short answers & time restraints are suitable for assessing knowledge
- If using computers: consider monitoring the students' computers (the solution we can currently offer is to provide an extra invigilator who monitors students' computer from the back of the examination location)

Written assignments (including master thesis)

- Explicitly communicate 1) when they are allowed to use the tools (e.g. when self brainstorming, collecting information), together with risks of obtaining false information and 2) when they are not allowed to use them (e.g. copy-pasting of the generated text).
- Consider combining the written assignment with oral examinations and/or peer reviews. Students should be able to answer for, justify, explain, extend, and modify any part of their work.
- Consider making it mandatory for the students to state if (and if so, how) they have been using AI tools for the assignment, e.g. in the methodology section.

On referencing AI-generated content
Guidelines regarding how to reference AI tools are still evolving. If a student refers to AI-generated text, e.g. ChatGPT content, in their assignment, consider advising them to follow APA's current recommendation (March 2023) and cite it as a personal communication. In addition to this, you may want to instruct the students to provide the complete ChatGPT transcript, along with the prompt(s) used, as an appendix.

On AI detector tools

Teachers are advised to not use detector tools such as GPTZero, Content at Scale, etc, since there are concerns with regards to intellectual property rights and GDPR compliance, as using such tools involve storing student material on servers that LU has no control over or contract with (yet).

On cheating

If students cheat by using tools such as ChatGPT, rather than understanding that as plagiarism, it should be classified as "use of unauthorized aid". However, for a misconduct to be classified as such and be brought to Disciplinnämnden, the teacher must have clearly communicated to the students which tools that are allowed for a given assignment, and which are not.

Appendix 5: Examples of guidance for students

5a: IIIEE

Background

Since the emergence of ChatGPT in November 2022, the capacity of artificial intelligence (AI) chatbots has been increasing rapidly over the last few months. In light of this development as well as its wide availability and very rapid uptake internationally, Lund University has organised a series of webinars "Handling the impact of AI tools" for its personnel in January – March 2023. While Lund University has not developed any university-wide guideline on this as of yet, given its relevance we decided to develop a short guideline for IIIEE thesis writers. Please note that the content will be very likely updated based on, among others, the development of LU-wide guidelines on the same, as well as further development of AI chatbots and others.

Guideline

Similar to the use of various search engines and sources available on the Internet, it is up to the thesis writer to use AI chatbots, such as Chat GPT, for purposes such as self-brainstorming and information gathering. Please be aware, however, that based on experiences so far, the accuracy of the information one gets through AI tools such as Chat GPT could vary significantly. Issues of potential bias of the information base used by AI tools to generate answers have also been pointed out. Just like any source, we strongly encourage you to be critical to sources and cross-triangulate the information received through such sources. Meanwhile, **you are not allowed to use the "products" generated by AI chatbots, such as texts and images, directly in your thesis work** – no copy-pasting of AI-generated texts or images in your thesis. In addition to potential copywriting issues, putting together various components of a thesis (texts, paragraphs, sections, chapters…) in a logical and coherent manner is a critical skill we would wish to equip all our students with. It is also an explicit grading criterion of your thesis work (data collection and presentation).

Similar to the use of the spelling and grammar check function of Microsoft Word, Grammarly and the like, it is fine to use AI chatbots for language correction as well. When using AI chatbots for translation purposes, just like when one uses other means of translation (e.g. translation by the thesis writer her/himself, Google Translate as a starting point and checked by XYZ), we recommend that you describe how you used these tools in your research methodology section.

5b: Medical Physics

Regarding thesis and chatbot

The concept of academic honesty has really been put to the forefront during the course of your thesis, through the introduction of the so-called chatbots. Lund University has not yet developed any university-wide guidelines on how this should be handled, which is why we decided to develop short guidelines for the degree project.

The use of chatbots is not recommended within the course, but it is not prohibited either.

As always, when you write a text and sign your name, it means that you yourself are responsible for every word and all data that is included in the report.

Examples of reasonable use of the chatbot could be to carry out translation and proofreading of a text draft. However, using chatbots requires extra careful critical scrutiny, as the quality of the information is known to vary.

It is not allowed to use products directly produced by the chatbot, such as diagrams, images or unedited text (cut/paste). These products are owned by the company that owns the chatbot and not you as the thesis author. The degree work includes writing a popular science summary, so the chatbot must not be used to convert an existing text to be adapted to age or competence because then the learning objective of being able to communicate with other staff is affected.

If you choose to use a chatbot, this must be declared, corresponding to other reference management. You must then include a section in the report where you describe which chatbot you used and how you used the chatbot when you wrote your report.

Reminder that there is information about academic honesty at the following link https://www.lub.lu.se/service-stod/studerandestod/akademiskt-skrivande/akademisk-hederlighet

Appendix 6:

PM rörande vilseledande plagiat och annat vilseledande fusk genom användandet av textgenererande AI-verktyg inom utbildningen vid Lunds universitet.

Den 2 februari 2023 inrättade rektor en arbetsgrupp angående ChatGPT och undervisning, vars uppgift bland annat var att se över universitetets riktlinjer och föreskrifter rörande plagiering och vilseledande plagiering inom utbildning på grundnivå, avancerad nivå och forskarnivå (Dnr LS 2010/722) i ljuset av de nya omständigheter som AI-tekniken innebär. Sammankallanden för arbetsgruppen har bett mig se över ovannämnda riktlinjer med särskilt fokus på frågor rörande disciplinära åtgärder mot studenter enligt 10 kap. högskoleförordningen (1993:100).

Inledning

Termen 'fusk' saknar legaldefinition inom högskolerätten. Vad som utgör "fusk" inom ramen för utbildningen vid universitetet, eller hur "fusk" ska hanteras, är med andra ord inte tydligt definierat i någon lag. I *Svensk ordbok* (SO) definieras 'fusk' som "utnyttjande av otillåtna metoder eller hjälpmedel i syfte att vinna fördel; [bl.a.] vid prov…". Enligt högskoleförordningen (1993:100) får disciplinära åtgärder i form av varning eller avstängning vidtas mot studenter som "med otillåtna hjälpmedel eller på annat sätt försöker vilseleda vid prov eller när en studieprestation annars ska

bedömas"[18]. Enkelt uttryckt är alltså försök till *vilse-ledande* fusk påföljdssanktionerat genom bestämmelser i högskoleförordningen.[19]

Plagiat och vilseledande plagiat

Plagiering är exempel på en vanligt förekommande form av fusk. Enligt Lunds universitets riktlinjer för plagiering och vilseledande plagiering (Dnr LS 2010/722) är plagiering "en brist på självständighet vid formulering eller utformning av ett redovisat arbete jämfört med vad som krävs i relation till utbildningens mål och sammanhang", medan vilseledande plagiering definieras som "en brist på självständighet där studenten dessutom med avsikt ger sken av att andras arbete är studentens eget arbete". Även om användandet av AI-verktyg – så som ChatGPT – vid formulering eller utformning av ett redovisat arbete ofta borde kunna falla in under definitionen av plagiat ovan, är det inte lika självklart att sådant användande faller in under definitionen av vilseledande plagiat, bland annat eftersom det inte är helt självklart att en text som genererats av ett AI-verktyg alltid kan sägas utgöra "andras [eller annans, min anm.] arbete".

Vilseledande fusk

När det gäller generativa AI-verktyg så som ChatGPT kan, utöver plagiat, även andra former av vilseledande fusk komma att bli aktuella. Att vara vilseledande är det samma som att ge någon (eller hålla kvar någon i) en felaktig uppfattning.[20] Att använda ett otillåtet hjälpmedel i syfte att kunna genomföra ett prov på ett enklare sätt kan alltså utgöra vilseledande fusk om användandet medför att någon, exempelvis examinatorn, får en felaktig uppfattning om t.ex. provets genomförande eller fuskarens kunskaper. Det krävs dock inte att en student faktiskt lyckas vilseleda någon för att en disciplinär åtgärd ska kunna vidtas mot studenten, utan det räcker att studenten har *försökt* vilseleda vid prov eller när en studieprestation annars ska bedömas.[21] Att studenten ska ha försökt vilseleda medför i sin tur ett krav på uppsåt;[22] det krävs alltså att studenten faktiskt *försökt* ge någon (eller hålla kvar någon i) en felaktig uppfattning. Det är varken nödvändigt eller tillräckligt att en student försökt agera på ett sätt (vid prov eller när studieprestation annars ska bedömas) som faktiskt gett någon (o.s.v.) en felaktig uppfattning för att en disciplinär åtgärd ska kunna bli aktuell. Vad som är avgörande är istället huruvida studenten på något sätt handlat med uppsåt att ge (eller hålla kvar någon i) en sådan uppfattning.[23] När det gäller verktyg som ChatGPT bör utgångspunkten för bedömningen inte vara huruvida studentens användande av verktyget faktiskt riskerat att vilseleda någon viss lärare, utan huruvida studenten använt verktyget i syfte att vilseleda eller åtminstone om studenten använt verktyget trots att hen måste ha insett risken att användandet skulle kunna komma att bli vilseledande – i båda fallen torde det krävas att verk-tyget faktiskt utgör ett otillåtet hjälpmedel, vilket i sin tur beror på utformningen av den aktuella kursen.

Tydlighet i information till studenter

Tydligheten i den information som tillhandahållits en student om vad som är tillåtet och inte, vad som ska bedömas och betygsättas och inte och så vidare kan ofta vara avgörande för bedömningen i

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[18] 10 kap. 1 § 1 st. 1 samt 2 § 1 st. högskoleförordningen.

[19] Det finns skäl som talar för att nyttjandet av otillåtna hjälpmedel i vissa fall skulle kunna anses utgöra grund för disciplinära åtgärder enligt 10 kap. högskoleförordningen även om nyttjandet i sig inte kan anses utgöra försök till vilseledande (här med stöd av 1 § 1 st. 2, som påföljdssanktionerar störande av prov och annan verksamhet inom ramen för utbildningen vid högskolorna). Så torde åtminstone vara fallet om det framstår som tydligt att nyttjandet varit otillåtet – det vill säga utgjort ett regelbrott – och att regelbrottet begåtts med uppsåt och stört verksamheten inom ramen för utbildningen på något konkret sätt.

[20] Nils Jareborg, "Disciplinansvar för studenter som fuskar eller stör" (Högskoleverket, 2002), 5.

[21] Se 10 kap. 1 § 1 st. 1 högskoleförordningen.

[22] Jareborg, "Disciplinansvar för studenter som fuskar eller stör", 10.

[23] Jmf. Jareborg, 9–10.

disciplinärenden. Det är långt ifrån självklart om (och i så fall vilka) AI-verktyg som får användas vid prov och liknande, utan det beror på både vilken information om tillåtna hjälpmedel som har förmedlats till studenterna, och provet eller uppgiftens utformning och uttalade syfte. I vissa fall kan det tänkas ligga i sakens natur att det är vilseledande att använda exempelvis ChatGPT. Som exempel kan tänkas vissa uppgifter som är formulerade som uppmaningar till tentanderna ("Beskriv [med egna ord]…", "Redogör [kortfattat] för…" o.s.v.). Det torde inte vara särskilt kontroversiellt att hävda att en student som lämnar in en hemtentamen med sådana besvarade uppgifter som beskrivs ovan (utan att det framgår att svaren är AI-genererade) försöker ge någon (direkt eller indirekt examinatorn) den felaktiga uppfattningen att studenten följt anvisningarna genom att själv beskriva, redogöra o.s.v.[24] I andra fall kan det vara nödvändigt att vara extra tydlig med vad som förväntas av studenterna – tydligheten i kommu-nikationen med studenterna om vad som är tillåtet är alltså i egentlig mening inte preventiv, åtminstone inte i första hand. Istället avgör tydligheten vad som faktiskt utgör vilseledande fusk och inte. Information om vad som är tillåtet, och inte, ska med andra ord inte bara ses i relation till fuskprevention. Informa-tionen avgör ofta vad som faktiskt utgör vilseledande fusk i det enskilda examinationsmomentet.

Vilseledande plagiat och annat vilseledande fusk som indirekt konsekvens av användandet av generativa AI-verktyg

Även om det inte nödvändigtvis är så att själva användandet av generativ AI i sig utgör försök till vilseledande i 10 kap. högskoleförordningens mening, kan användandet av AI-verktyg tänkas kunna innebära försök till vilseledande på andra sätt. För det första är det inte säkert att AI-genererad text är helt originell eller unik. AI-verktyg som ChatGPT bygger på stora mängder text som har producerats av människor, och kan därför komma att återanvända eller omarbeta delar av dessa texter.[25] Det kan därför vara svårt för den enskilde studenten att upptäcka eller kontrollera om AI-genererad text innehåller stycken som vid inlämning skulle kunna uppfattas som vilseledande plagiering även om studenten är medveten om den risken (en sådan medvetenhet talar snarare till studentens nackdel, se nedan). Det är inte heller ovanligt att AI-verktyg fabricerar referenser till källor som inte existerar. Det finns goda skäl som talar för att det kan vara vilseledande i 10 kap. högskoleförordningens mening att lämna in en AI-genererad text som ger sken av att andra *personers* arbete är studentens eget, eller som innehåller fabricerade källhänvisningar, så länge studenten lämnat in texten trots att hen varit medveten om den risken.[26] Sådant vilseledande skulle i så fall ofta kunna upptäckas med mer traditionella metoder så som *ouriginal* och stickprov av källhänvisningar.

Upptäckt och GDPR

När det gäller upptäckt av användande av AI-verktyg finns särskilda tjänster (AI-detektorer) som uppges ge en indikation på sannolikheten att en viss text är författad av till exempel ChatGPT. Det är

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[24] Om en student i stället använt någon annans text för att svara på frågorna, och därigenom framställt den som sin egen, rör det sig om tydligt plagiat. Att det i egentlig mening inte rör sig om någon annans text (åtminstone inte "någon annans text" som i "någon annans *persons* text") vid användandet av ett AI-verktyg verkar dock inte innebära att det att försöka framställa sådan text på ett sätt som ger sken av att studenten följt anvisningarna i tentamensfrågorna är mindre missvisande.

[25] ChatGPT genererade texter har i en studie visat sig kunna ge utslag i Ouriginal uppåt 13 %, se Randy Joy Magno Ventayen, "OpenAI ChatGPT Generated Results: Similarity Index of Artificial Intelligence-Based Contents", *Available at SSRN 4332664*, 2023.

[26] En student som måste ha insett, men förhållit sig likgiltig inför, risken att en AI-genererad text som har lämnats in för bedömning innehåller vilseledande plagiat (det vill säga ger sken av att andras arbete är studentens eget arbete) eller fabricerade källhänvisningar torde i vissa fall kunna sägas ha så kallat "likgiltighetsuppsåt", jmf. NJA 2004 s. 176. Det är dock inte otänkbart att det att en student lämnar in en text för bedömning med källhänvisningar till material studenten inte har läst i sig skulle kunna anses vara vilseledande i 10 kap. högskoleförordningens mening.

dock svårt att bedöma sådana tjänsters tillförlitlighet, och dessutom är det troligtvis inte tillräckligt med ett resultat från en sådan tjänst för att det ska kunna anses vara styrkt att en student använt ett AI-verktyg för att generera en inlämnad text. Även om sådana tjänster förvisso skulle kunna användas som urvalsgrund för t.ex. kontroll av källhänvisningar med mera, så finns det många skäl som talar för att eventuellt nyttjande av tjänsterna bör ske med stor försiktighet. Att överföra studentarbeten till AI-detektionstjänster med servrar utanför EU skulle troligtvis strida mot EU:s dataskyddsförordning (GDPR) i många fall, för att bara nämna ett sådant skäl till försiktighet.

Angående Lunds universitets riktlinjer för plagiering och vilseledande plagiering (Dnr LS 2010/722).

Det är tveksamt om användandet av AI-verktyg som Chat GPT för att generera text i sig kan sägas innebära ”vilseledande plagiering” i den mening som avses i Lunds universitets riktlinjer för plagiering och vilseledande. Det hade förstås varit möjligt att ändra den nuvarande definitionen av vilseledande plagiering, ”en brist på självständighet där studenten dessutom med avsikt ger sken av att andras arbete är studentens eget arbete”, till en definition som även inkluderar AI-genererad text, men en sådan definition hade varit problematisk av flera anledningar – en AI-översatt text behöver inte nödvändigtvis utgöra just plagiat (även om, till exempel, användandet av en sådan text i en inlämningsuppgift i en språkkurs torde kunna anses vara vilseledande i många fall). En definition av vilseledande plagiat som innebär att man kan plagiera icke-personer verkar inte heller överensstämma särskilt bra med allmänt språkbruk. I *Svensk ordbok (SO)* definieras 'plagiat' som en ”direkt upprepning eller efterbildning av eller lån ur (konstnärligt eller vetenskapligt) verk utan angivande av förlagan eller källan”, och *Svenska Akademiens ordlista (SAOL)* ger definitionen ”produkt av vetenskaplig [eller] konstnärlig stöld”, vilken stämmer överens med den äldre definitionen i *Svenska Akademiens ordbok (SAOB)*[27]. Att användande av AI-genererad text (utan att ange källa) per definition skulle utgöra någon form av stöld verkar inte alls särskilt självklart (även om det möjligen hade gått att hävda att sådant användande skulle kunna falla in under definitionen i *Svensk ordbok*).[28]

Det är alltså tveksamt huruvida stora delar av universitetets riktlinjer är relevanta för vilseledande fusk genom användandet av AI-verktyg. Även om många av de tillämpningsregler som finns i riktlinjerna är högst relevanta även när det gäller vilseledande fusk genom användandet av AI-verktyg, exempelvis tillämpningsregel 2 om att man vid bedömning normalt bör ta hänsyn till ” kursens nivå, examinationsuppgiftens plats i utbildningen och ställda förkunskapskrav”, så är det inte lika självklart hur, för att bara nämna ett exempel, de för plagiat högst relevanta tillämpningsreglerna gällande principer för källhänvisningar skulle kunna tillämpas på vilseledande fusk genom AI-verktyg på ett rimligt sätt. Med anledning av vad som framförts ovan verkar det, i min mening, olämpligt att utöka definitionen av *vilseledande plagiat* så att den innefattar användande av AI-genererad text.

Slutsats

Sammantaget kan konstateras att det inte alltid måste ses som försök till vilseledande i 10 kap. högskoleförordningens mening om en student använder verktyg som ChatGPT i samband med examination, men det finns flera scenarier där användandet skulle kunna tänkas utgöra vilseledande plagiat eller annat vilseledande fusk. Det är ofta viktigt att beakta både vilken information som har förmedlats till studenterna om tillåtna hjälpmedel och provets eller uppgiftens utformning och syfte.

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[27] ”handlingen att plagiera, plagiering, litterär [eller] konstnärlig stöld; ofta konkretare, om det som stulits [eller] lånats (t. ex. ett avskrivet stycke).” (SAOB Spalt P 1005 band 20, 1953)

[28] Vad gäller definitionen av plagiat (plagiering), jmf. Mattias Alveteg ”PM rörande plagiering och vilseledande plagiering inom utbildning på grundnivå, avancerad nivå och forskarnivå vid Lunds universitet” (Lunds universitet, Dnr LS 2010/722), 2-3

Tydlig kommunikation med studenterna angående vad som är tillåtet och inte är avgörande för att kunna bedöma om användandet av AI-verktyg utgör vilseledande fusk eller inte.

Uppmärksamhet bör även riktas mot de indirekta konsekvenser av användandet av generativa AI-verktyg som kan innebära vilseledande plagiat eller annat vilseledande fusk, till exempel genererade texter med återanvända eller omarbetade delar av andras texter eller med fabricerade källhänvisningar. När det gäller upptäckt av användandet av AI-verktyg bör stor försiktighet iakttas vid användning av AI-detektionstjänster, inte minst på grund av de potentiella integritetsfrågor som kan uppstå i samband med överföring av studentarbeten till tjänster med servrar utanför EU.

För att säkerställa en rättvis och transparent examinationsprocess bör universitetet fortsätta att informera och utbilda både lärare och studenter om riskerna och konsekvenserna av användandet av AI-verktyg inom akademien. Detta kan innebära att förtydliga vilka typer av hjälpmedel som är tillåtna och vilka som inte är det samt att regelbundet uppdatera riktlinjer och föreskrifter för att anpassa dem till det snabbt föränderliga tekniska landskapet. Genom att göra detta kan universitetet bidra till att minska risken för vilseledande fusk och upprätthålla akademisk hederlighet i en tid av teknisk innovation.

Som ett led i detta anser jag att Lunds universitets riktlinjer och föreskrifter rörande plagiering och vilseledande plagiering inom utbildning på grundnivå, avancerad nivå och forskarnivå (Dnr LS 2010/722) bör utökas med separata riktlinjer om vilseledande fusk genom användandet av AI-verktyg med tillhörande föreskrifter motsvarande dem för plagiat och vilseledande plagiat.

Lund, dag som ovan,

Lehman Benson Jr.