

# Dealing with ChatGPT in academic teaching – an update of the initial orientation guide of TU Dortmund University

## Artificial Intelligence (AI) in academic teaching

*In view of the numerous questions that have arisen since the public debate about ChatGPT, TU Dortmund University would like to provide its staff and its students with an initial orientation guide for teaching.*

*At our university, we also research and work with AI. This is not the only reason why we have a responsibility to accompany the use and social relevance of developed tools in a constructive and critical manner. The goal of the coming years should therefore be to discuss and reflect on a meaningful use and a critical as well as ethically responsible use and evaluation of generative AI-supported writing tools – such as currently ChatGPT or Google Bard.*

### Part 1: Basics

#### **# What is ChatGPT?**

ChatGPT is an AI-assisted writing tool developed by the US company OpenAI, specialized in chat dialogs. It is based on the GPT (*Generative Pre-trained Transformer*) language model. Users can enter questions, ask follow-up questions and respond with their own thoughts. ChatGPT generates the answers as a dialog. It was released at the end of 2022 and since then has attracted a lot of attention, also in the context of academic teaching.

#### **# How does ChatGPT work?**

The texts created by ChatGPT are based on training data. Currently, users are constantly training and developing the language model through their input and reactions. The training data is not searched and processed in terms of content, but the language model generates a new text based on the probability with which certain words follow one another in certain contexts. Thus, users cannot necessarily assume that ChatGPT's responses are factually correct.

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## Part 2: Relevance to academic teaching

### # Why is there so much attention on AI-assisted writing tools?

The fear is that AI-assisted writing tools could make written coursework and exams obsolete. To be sure, there were AI-based text production tools from various companies prior to the release of ChatGPT. However, ChatGPT is more powerful (in perspective) and available for free (so far) and is therefore widely noticed and used. The newer language model GPT-4 is already much more advanced in terms of performance, but also comes with a fee and is thus more restricted in access.

### # What can ChatGPT currently do in the context of university examinations?

Currently, ChatGPT is not yet capable of producing a continuous term paper or a publication, but it is very capable of producing individual parts. Since the program generates answers to entered questions, it can respond to follow-up questions or entered thoughts. It is thus dependent on the guidance of the user. AI-assisted writing tools can support writers, but require appropriate input and unconditional verification of the results.

Given the way ChatGPT works as described above, the program (currently) cannot specify existing sources. Rather, it also strings together content based on probabilities. Thus, the writing tool may give the impression that it can list sources.

However, AI applications are expected to become much better and more reliable in the medium term. In addition, we can expect AI-assisted writing tools to be optimized for specific domains – including the scientific context when scientific literature is fed into the training data.

### # Why is it not purposeful to ban ChatGPT in academic teaching?

As already outlined at the beginning, it is a university task, not least to drive forward technical developments and to accompany them critically. AI tools are and will be increasingly classified and used as everyday tools in many areas of life. A general ban on AI-assisted writing tools would at the same time also refer to other technical tools and software that we use as a matter of course and that are also based on AI.

AI-based writing tools will thus prospectively become a matter of course in everyday university life. AI-based translation programs have already been around for some time (e.g., DeepL).

## Part 3: Legal aspects of auditing

### # Authorship

AI tools such as ChatGPT cannot be authors of the texts generated by them (due to the lack of human creative activity); their use, therefore, does not constitute plagiarism per se – from a copyright perspective. However, the use of texts generated by AI tools may infringe (copyright) rights of third parties. It remains to be seen whether the legislator will adopt regulations for dealing with AI-generated content. In compliance with the terms of use, the users of AI-assisted writing tools can hold rights of use to the text created in the particular case. However, this does not mean that they are to be regarded as the authors of the texts created.

### # Need for regulation and labeling obligation

According to the regulations of the examination regulations of TU Dortmund University, written declarations can be required from students in the context of examinations (module examinations, partial assessments, theses, etc.) that they have taken the examinations independently and have not used any sources and tools other than those specified (so-called affidavits). Often, there are already internally coordinated guidelines on permissible tools, which must be signed by the students and attached to the examination.

In order to create more clarity and transparency in dealing with AI tools, already existing declarations can be supplemented subject-specifically as to whether and, if so, to what extent and under which conditions AI tools can be used. This may be handled differently from subject area to subject area and even from audit to audit. The same applies even if no specifications currently exist. In this case, too, reference should be made to AI tools as permissible or also impermissible tools. You can find corresponding formulation suggestions in the sense of prime examples in the [ServicePortal](#).

### # Assessment of examination performance

Most examination regulations stipulate for the assessment of examination performances that the evaluation must be carried out “by” or “of” the examining persons and must be justified in writing. The assessment must be connected with an own performance. This means that there is no permissible assessment of the examination performance if the examination performance is entered into the AI tool, the assessment is left entirely to the AI and the result is taken over in the wording.

Furthermore, uploading exam papers can be problematic from a copyright perspective. The moment the examiner copies the exam paper into the AI tool, a reproduction may take place. Because ChatGPT (at least currently) continues to exploit the content of the user’s input as training data beyond the respective request, there is a risk of copyright infringement. In some cases, the terms of use of individual AI tools may also provide that the operator of the respective AI tool is granted extensive rights of use. Against this background, it is not advisable to use AI tools for the assessment of examination performance or generally to upload copyrighted works of third parties. If personal data such as student names or student ID numbers are uploaded in the context of the use of AI tools, the requirements of the General Data Protection Regulation (GDPR) are being disregarded. In this case, the consent of the students must always be obtained. In a statement issued by its Executive Committee, the [German Research Foundation \(DFG\)](#) also prohibits the use of generative language models in the preparation of reviews, with reference to the confidentiality of the review process.

Insofar as an AI-supported writing tool is used for the fact that it is not to assess the work per se, but only to formulate the text of the independent assessment of the examining person, the examination regulations do not make any detailed specifications in this regard.

Even if the AI tool is only to be used as a supplement in the assessment of an examination performance, i.e. if the examining person carries out the assessment of the work independently and uses the AI tool for an additional assessment, so that the product of the AI only flows in indirectly, the examination regulations do not currently speak against the use of AI tools.

The decisive factor, even when AI-supported writing tools are used in the context of the assessment, is that the examining person must always have assessed the examination performance himself/ herself and the assessment is thus associated with the examining person’s own performance.

## Part 4: Didactic possibilities with ChatGPT and other AI-based tools

### # What are the didactic potentials of using ChatGPT and other AI-assisted writing tools in academic teaching?

Generative AI applications can be used with benefits in academic teaching and support both teachers and students.

In the [Guiding Principles Good Teaching](#) at TU Dortmund University, university members have agreed that a course of study at TU Dortmund University aims “at the acquisition of competencies in the critical application and generation of knowledge on the basis of the current state of research.” Teachers should therefore open up opportunities for students to engage together critically and reflectively with ChatGPT and other AI tools in order to practice new or extended competencies, for example in fact-checking or plausibility checking when dealing with AI-generated results. Previous learning objectives such as the acquisition and practice of reading sources critically, reflection skills, critical thinking, and general media literacy also remain highly relevant. They need to be adapted to new tools.

ChatGPT with its formulation suggestions can, for example, facilitate the entry into a writing process or a subject area or can also be used to survey one’s own learning status. In order to be able to produce good scientific texts with the help of AI-based writing tools, users need a basic key competence: They must “ask the right questions” or make the right inputs, give impulses, structure thoughts and arguments – and review, assess and improve the generated texts. Creating, reflecting on, assessing, and revising an AI-generated text requires intellectual effort on your part. Their application can be practiced and critically accompanied (in a playful way) in seminar environments or exercises. Prerequisites for this are basic competencies in writing and reading scientific texts as well as the application of acquired specialized knowledge and acquired specialized competencies. This close connection must be didactically elaborated. It is recommended that teachers enter into dialog with students about scientific competencies and [good scientific practice](#).

### # To what extent should certain written examination forms be adapted?

Given the developments of generative AI-assisted writing tools, forms of exams are under scrutiny. Written examinations, which are created without supervision and with access to appropriate platforms, raise new didactic questions. In principle, this must be checked out on a case-by-case basis depending on the subject area, learning objectives and function of the examination.

If you intend to keep the previous form of examination (e.g., a term paper or a written portfolio), it could make sense to adapt the assignment and the assessment criteria, e.g., to give greater weight to reflective and other personal contributions. It is conceivable to change the examination tasks, e.g., towards more comparison, reflection, assessment, etc., or to include a mandatory chapter on the use of tools, a description of the methodology, and a reflection on the results. Furthermore, a transcript of the dialog with the language model or a list of inputs could be included. Another possibility would be to add oral elements to the written exam form or to include the learning and tutoring process in the exam. If not only accumulated knowledge but the ability to act in subject-specific situations is to be tested – i.e. if it is a competence-oriented examination – AI-assisted writing tools could serve as tools in formulating or summarizing content. Moreover, the use of tools can also be the subject of an examination.

It is recommended that teachers agree with students on rules for dealing with AI-assisted writing tools and communicate them accordingly (see above).

## Part 5: Help

### # Contact persons and support services

In order to develop personal teaching skills, the TU Dortmund University provides appropriate offers for its teachers. In the [Division of Academic Teaching and Faculty Development](#) at the Center for Higher Education (zhb), you will find a diverse workshop program on all aspects of (digital) teaching and learning. The contact person is [Dr. Katrin Stolz](#). If you have any questions specifically about digital support for teaching, our coordinator for digital teaching, [Tobias R. Ortelt](#), is also available.

For technical questions, please contact the ITMC: [service.itmc@tu-dortmund.de](mailto:service.itmc@tu-dortmund.de).

The [Section Examination and Study Matters, Corporate Center Student Services](#), will be happy to advise you on the above-mentioned matters relating to examination law.

### Sources:

**Peter Salden**, Jonas Leschke (Hg.): Didaktische und rechtliche Perspektiven auf KI-gestütztes Schreiben in der Hochschulbildung. 2023. URL: <https://doi.org/10.13154/294-9734>.

**Henner Gimpel et al.:** Unlocking the Power of Generative AI Models and Systems such as GPT-4 and ChatGPT for Higher Education. A Guide for Students and Lecturers. URL: [Unlocking the Power of Generative AI Models and Systems such as GPT-4 and ChatGPT for Higher Education: A Guide for Students and Lecturers \(uni-hohenheim.de\)](#).

Stellungnahme des Präsidiums der Deutschen Forschungsgemeinschaft (DFG) zum Einfluss generativer Modelle für die Text- und Bilderstellung auf die Wissenschaften und das Förderhandeln der DFG. URL: [https://www.dfg.de/download/pdf/dfg\\_im\\_profil/geschaeftsstelle/publikationen/stellungnahmen\\_papiere/2023/230921\\_stellungnahme\\_praesidium\\_ki\\_ai.pdf](https://www.dfg.de/download/pdf/dfg_im_profil/geschaeftsstelle/publikationen/stellungnahmen_papiere/2023/230921_stellungnahme_praesidium_ki_ai.pdf).

**Note:** *In view of the rapid developments and the ongoing debate, this handout and following handouts can only be temporary versions. It is intended as an orientation guide and an invitation for reflection and discussion. If you are interested, please keep yourself informed and contribute to the ongoing debate.*

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