Article – Theme section

Danish university policies on generative AI
Problems, assumptions and sustainability blind spots

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Abstract

The sudden and meteoric rise of generative Artificial Intelligence (genAI) has raised fundamental concerns for universities. Using Bacchi's methodology on 'problematisation', we analyse which concerns Danish universities have addressed through their policies and guidelines. We identify three key problematisations: assessment integrity, legality of data and veracity. While each of these problematisations involves specific limitations, together they also strongly emphasise symbolic and epistemological issues and consequently mostly ignore the materiality of genAI, for example, in terms of labour and energy use. Drawing on critical AI studies, this article argues that universities should also consider the huge planetary costs that (gen)AI poses as well as the full range of AI's exploitative business models and practices. Universities should integrate these considerations into both their decision-making on (not) using certain technologies and their policies and guidelines for research and teaching, just as sustainability is already a criterion in their travel or investment policies today.

Keywords

Generative AI, higher education, policy, sustainability, Denmark, ChatGPT

Introduction

Although OpenAI's ChatGPT-3 was not the first or only available Large Language Model (LLM) at the time of its release to the broader public in November 2022, it generated such high levels of hype, promise and concern that different institutions felt urged to act upon it instantly. Not least in higher education, because soon after ChatGPT-3's release and widespread adoption, students were writing their exam papers, both internationally (Ofcom, 2023) and in Denmark (Dansk Erhverv, 2023). The arrival of a chatbot that, within seconds, could produce human-like answers to almost any type of question sparked fears of cheating – which news media reported did in fact occur (TV 2, 2023) – while struggling to detect this.

Moreover, news articles reported "how smart these generative AI tools are" (e.g., Varanasi, 2023) as ChatGPT-3 and its successors could (narrowly) pass standardised exams in law (Choi et al., 2022), medicine (Huh, 2023; Kung et al., 2023; Roemer et al., 2024), and finance (Callanan et al., 2023). Yet outright banning of the technology would go against the loud calls by leaders in industry and higher education to incorporate generative Artificial Intelligence (genAI) such as ChatGPT into teaching so that students could master these tools and acquire the necessary skills for the labour market. This forms part of a wider tendency within and beyond education that sees AI as 'the future' (Yu, 2023), as 'inevitable', and as a race that we cannot not be a part of (e.g., Brevini, 2020, 2021; Selwyn, 2024).

At the same time, critical voices added further dimensions to universities' balancing act between controlling the (mis)use of genAI and enabling students' acquisition of skills in this area. One such dimension is that ChatGPT lacks the ability to 'understand', which makes its use in education debatable (Selwyn, 2024). Several studies added that its output can be biased, that it relies on an exploitative business model, and that it has potentially detrimental consequences for the environment due to its large energy and material needs which, together, affect especially vulnerable groups and those in the majority world (Bender et al., 2021; Brevini, 2020; Tacheva & Ramasubramanian, 2023).

Given this complex context, our article asks which of the above concerns have been translated into the policies that universities have developed in order to adapt to the wider adoption of genAI. We examine the policies on genAI developed at eight universities in Denmark between late 2022 and early 2024. In contrast to secondary and professional education, which is bound by governmental exam policy (set by the Minister of Children and Education), universities can regulate this themselves. To focus on their definition of the problem and its underpinning assumptions, we use Bacchi's (1999, 2009) 'What's the Problem Represented to be?' (WPR) methodology. This approach allows us to examine what concerns regarding the use of ChatGPT, and LLM or genAI more generally, in higher education are driving the policy-making process, both explicitly and implicitly. Do these policies narrowly focus on cheating and plagiarism, or do they also address wider concerns? Studying the scope of concerns expressed in the policies is important because it

gives us insight into the dimensions that are (not) valued and into the ways that both the institution, its staff and its students approach and potentially use the technology – ranging from a neutral tool that can "solve problems" (Brevini, 2021; Kaltheuner, 2021; Morozov, 2013) to a technology embedded in a particular political economy, ecology and unequal society (e.g., Goodlad, 2023; Selwyn, 2024). This article will show that current Danish university policies mostly lean towards the former, while we argue that the standard should be the latter.

In the next section, we situate our study by discussing general concerns regarding genAI in higher education and the organisational changes and policies that it has brought about. Drawing on critical AI studies, we then add a further perspective to these debates by giving a brief overview of concerns regarding (gen)AI beyond education, and especially in terms of political economy, inequalities and the environment. This combination prepares us to discuss our empirical study, which we first introduce through its methodology and then its results. We finally return to our research question and address the further implications of our study in the concluding section.

Literature review

Concerns regarding genAI in academia

ChatGPT is a chatbot, an advanced language model that can create sophisticated human-like text (Dwivedi et al., 2023). It works by generating a sequence of words refined through pattern recognition in data, with the result that it creates in the user a perception of intelligence and trust (Jo, 2023). It can be asked to adopt different roles, such as teacher, student, tutor, designer or expert, to address different tasks, ranging from analysing to suggesting, from summarising to comparing. Given its recent availability to the general public, and the possibility of its use in higher education, it is thus not surprising that it has attracted widespread academic interest and produced a high number of publications – mostly focusing on its benefits and limitations, opportunities and challenges, risks and potentials, positive and negative transformations (Adeshola & Adepoju, 2023; Memarian & Doleck, 2023).

As with any other technology introduced in education, the dualism between dystopia and utopia is widely represented in discourses about ChatGPT (Pischetola, 2021). The usual conclusion presented in the literature is the need to develop both institutional policies (Cotton et al., 2023) and users' literacy (Rawas, 2023) in order to mitigate the negative impacts of the new technology and maximise its benefits. In the case of genAI, the policies are seen as an instrument for boosting the positive outcomes of genAI's use, for example, by generating responsible practices in the direction of a 'citizen-centric AI' (Baldassarre et al., 2023) or by fostering a 'human-centred collaboration with AI' (Fui-Hoon Nah et al., 2023). A user skilled in critical thinking and digital competence is thought to be

able not only to obtain the 'correct information' from ChatGPT but also to understand its constraints and 'moral issues' (Adeshola & Adepoju, 2023), such as biases and privacy.

For the purposes of our paper, we will first present a review of the general concerns that have consistently appeared in the literature on higher education and AI published since the release of ChatGPT-3.5 in 2022. The two keywords used initially in the literature search were 'ChatGPT' and 'higher education'. In a second round of literature review, we added the keywords 'policies', 'regulation', 'concerns', 'opportunities' and 'challenges' to learn what academics were depicting as the main issues of concern for ChatGPT in higher education. This literature review reveals four recurrent central concerns that authors link to the need for new regulations at the university level: (1) cheating, (2) plagiarism, (3) non-consensual use of data, and (4) quality of education.

The first two concerns can be considered subtopics of a common theme, i.e., academic integrity (Cotton et al., 2023; Sullivan et al., 2023). Considering the difficulties in detecting and preventing academic dishonesty, cheating becomes an obvious problem at the level of student assessment (Gorichanaz, 2023; Oravec, 2023). Given the purpose of higher education to support the development of knowledge, the assistance of AI for essay writing is problematic, both in terms of transparency and in terms of the actual ability of a teacher to evaluate the students' learning outcomes (Ventayen, 2023). The capability of LLMs to avoid existing plagiarism detection software raises a broader problem for academic integrity (Kiryakova & Angelova, 2023; Uzun, 2023). In fact, plagiarism involves not only students but also researchers and senior academics (Bin-Nashwan et al., 2023) in serious implications for what it means to do science (Lund et al., 2023). In addition, experimental software to detect AI-produced writing has become available although its efficacy is questionable and, in some cases, even discriminatory against non-native English speakers (Sample, 2023). OpenAI CEO Sam Altman suggested in an interview that education should perhaps just adapt to genAI, as it did when calculators entered the classroom (Mok, 2023). Drawing on the work of Langdon Winner (1978), Selwyn (2024, p. 9) characterises such prioritisation of the needs of AI over those of education, instead of technology adapting to the social world, as a typical example of 'reverse adaptation'.

The third concern, non-consensual use of data, relates to both privacy and copyright infringement. On the one hand, there is a potential risk of personal data and confidential information being made accessible to unauthorised persons, who might use it for purposes other than that for which the user gave consent (Dwivedi et al., 2023; Winograd, 2023). It is therefore a concern that primarily relates to the interests of the individual subject and the exposure of personal information and search content (Albayati, 2024). On the other hand, OpenAI has reported to have fed ChatGPT with 300 billion words extracted from online sources without formal consent, including digital learning platforms (Williamson, 2017) – which in itself presents the possibility not only of privacy breaches (ThankGod Chinonso, 2023) but also of copyright infringement (Van Dis et al., 2023). In all these cases, ethical problems related to trust and transparency have been raised regarding

the ways data is collected and manipulated (Chandra et al., 2022). Such data extraction is symptomatic of a wider digital exploitative political economy, referred to by some as surveillance capitalism (Zuboff, 2019), by others as data colonialism (Couldry & Mejias, 2019; Ricaurte, 2019).

Finally, several researchers in education and the social sciences have expressed concerns about limited quality and depth of research (Flores-Vivar & García-Peñalvo, 2023), as well as a negative impact of genAI on skills that are uniquely human, such as critical thinking (Warschauer et al., 2023), empathy (Hagendorff et al., 2023), and creativity (İpek et al., 2023).

Coeckelbergh and Gunkel (2023) argue that these different positions and concerns are based on common assumptions. They tend to see ChatGPT as either a mere instrument that can be used for positive or negative purposes, or as an agent that works on its own without any human interference. The inextricable relationship between human subject and technology, the authors maintain, does not allow for such a simplification. It is not a question of defining what is 'good' or 'bad' in the use of ChatGPT but rather of understanding that this chatbot is a political technology (Coeckelbergh, 2022). From this perspective, language is seen as performative, i.e., a tool that not only expresses or represents human (or machine) intelligence but one that also "shapes our thinking and configures our world" (Coeckelbergh & Gunkel, 2023, p. 3). Once we recognise that AI-generated text creates meaning and values that are raising political and ethical issues, we can proceed with a critical analysis of ChatGPT.

Organisational changes and new regulations

The disruptive power of ChatGPT in academia, expressed in the list of concerns mentioned above, has posited the need to urgently revise institutional practices and policies. At public universities in Hong Kong, for example, three phases have been discerned in such policy-making (Cheng & Yim, 2024): while at first most universities 'procrastinated' by implementing temporary bans or leaving it up to teachers to decide on its use, in a second phase more universities set out their position and implemented regulation. In phase three, that of adaptation, universities carefully allowed staff, in particular, to use genAI for trial periods, as ChatGPT had not yet been officially released in Hong Kong at that time. Another study, looking at the top 500 universities as ranked in the QS World University Rankings, came to a similar conclusion and summarised the timeline for implementation of genAI policies as 'waiting, banning, and embracing' (Xiao et al., 2023).

Generally, the recent literature on university regulations focuses on two areas: rethinking assessment (e.g., Luo, 2024; Rudolph et al., 2023), and creating rules for accountability. First, university managers and regulators have been questioning the validity of the current performance evaluation approach (Chaudhry et al., 2023) and its sudden, possible, obsolescence. In fact, despite the general agreement that genAI cannot, and should not, be banned by universities (Lo, 2023; Sullivan et al., 2023), there is no clarity as to how to

continue to guarantee the academic integrity and quality of educational courses and programmes in the face of the capabilities of this LLM (Chaudhry et al., 2023). Rethinking assessment and examinations is therefore seen as an urgent and necessary organisational change (Chan, 2023). However, Luo (2024) argues that such approaches rely on a perhaps outdated understanding of originality by excluding technological mediation, collaboration and distribution from a student's intellectual work, such as through genAI.

Second, to address the lack of transparency, several authors stress that universities should develop new rules for accountability. Chan (2023), for example, proposes that a policy framework for university teaching and learning should provide guidelines for attribution of AI-generated content. This would include "ethics of use, knowledge of affordances, effective use, critique/evaluation of outputs, and role/integration in workflows/product in study and professional settings" (Chan, 2023, p. 15). This aligns with the inclusive approach to originality that Luo (2024) suggests.

Nevertheless, some of the literature on the regulation of LLMs has also underlined how policies should be developed in parallel with practices (Chan, 2023), as the whole university community should learn how to integrate AI tools into current workflows. Mills et al. (2023) point out that this is precisely what has been challenging in the response of institutions to genAI so far, namely the urgent need to adapt university policies on the use of LLMs while at the same time exploring their pedagogical applications. Van Dis et al. (2023) add that non-commercial organisations such as universities can hardly keep up with the rapid pace of AI development, with consequent difficulties in creating meaningful policies and practices. According to the authors, open-source language models should be prioritised over tools such as ChatGPT, whose training sets are not publicly available and opaque.

In the literature review presented so far, we have included references to several critiques of (gen)AI, especially in terms of legal aspects (plagiarism, copyright) and educational aspects (learning, originality and (reverse) adaptation). In the next section, we will focus on questions raised by the fields of critical AI and data studies with regard to the role of AI in a world facing climate crisis, economic precarity, increasing harm to individuals and public infrastructure, and an unprecedented concentration of power (Goodlad, 2023). It is essential to consider this broader context since higher education institutions and the policies they develop, as well as the technologies they use, are inescapably embedded in such environmental, political economic, and social contexts. Reviewing these concerns helps to complete our analytical framework of possible concerns that could feed into higher education policy-making on technology uses more generally.

Critical AI and data studies' concerns about (gen)AI

One of the most scathing critiques of genAI and LLMs specifically has been the infamous '*On the dangers of stochastic parrots*' paper by Emily Bender and colleagues (2021). Taking a step back from the admittedly strong technical performances of LLMs, the authors

urge us to take into consideration several other dimensions in order to come to a more comprehensive evaluation of genAI. A central target of their critique is the ever-larger size of language models in terms of number of parameters and dataset size. As more recent studies have confirmed, bigger (and upgraded) is not necessarily better. On several performance metrics (e.g., identifying prime vs. composite numbers), ChatGPT-4 scores worse over time (Chen et al., 2023), for example, while the costs of training and using ever bigger technologies are considerable. We are referring not only to costs in terms of financial investments here but also to environmental costs and risks.

When AI is repeatedly presented as the train one cannot afford to miss, it is perhaps not so surprising that environmental concerns have been crowded out by technological and utopian discourses. Yet there are plenty of critical dimensions and alarming numbers to consider. As Brevini (2020, p. 2) succinctly summarises:

> These material apparatuses and technologies deplete scarce resources in their production, consumption and disposal, thus increasing the amounts of energy expended in their use and exacerbate problems of waste and pollution. AI also relies on data centers that demand impressive amounts of energy to compute, analyze, and categorize with grave consequences for the Climate Emergency.

In other words, we need to pay attention to the materials and energy needed for the production and implementation of AI. In terms of materials, it is easy to overlook the rare minerals, metals, and many oil-derived plastics as well as the damage that the mining and extractive activities cause to local people and their natural surroundings (e.g., Brevini, 2020; Crawford, 2021; Taffel, 2023) when a technology by the name of 'Artificial' Intelligence is made invisible through the cloak of virtuality. Furthermore, its daily functioning depends on 'materials', namely natural resources such as water to cool the servers that store all the necessary data, all while billions of people are already affected by droughts and water scarcity. Although there is very little transparency of the planetary costs of (gen)AI (Crawford, 2024), some studies have tried to provide estimations or calculations. Li et al. (2023), for instance, predict that, by 2027, global AI demand for water withdrawal could amount to between 4.2 to 6.6 billion cubic metres. To put this into perspective, this is higher than the use of half the United Kingdom and, regarding our empirical focus, more than 4 to 6 times Denmark's water use. The same study finds that, depending on the user's location, ChatGPT-3 requires 500ml of water for 10 to 50 responses.

In return, AI emits enormous amounts of carbon dioxide into the atmosphere, for example because of the high energy use of its data centres (Brodie, 2023; Hogan, 2018) – and most such energy use does not stem from renewable sources (Bender et al., 2021). This energy use occurs both during the training phase and during its later deployment. In the later stages of technology disuse, we also have to account for various forms of e-waste (Taffel, 2015). Taken as a whole, is (gen)AI inevitable and should we not take the enor-

mous planetary costs into account *before* we decide to prompt a chatbot or ask others, such as students, to query ChatGPT?

This is especially because "increasing the environmental and financial costs of these models doubly punishes marginalised communities that are least likely to benefit from the progress achieved by [LLMs] and most likely to be harmed by negative environmental consequences of its resource consumption" (Bender et al., 2021, p. 610). One related and prominent example here is how OpenAI, via its subcontractor Sama, relied on Kenyan workers who were tasked to label toxic content in training datasets. Although this involved going through detailed descriptions of violence, suicide and bestiality, little psychological support was given, and the workers' salary was limited to a mere USD 2 per hour (Perrigo, 2023).

To Tacheva and Ramasubramanian (2023), such stories are the perfect illustration of their argument that what they call the global order of 'AI Empire' is constituted by an

> interlocking assemblage (...) [consisting of] racial capitalism and white supremacy, modernity/coloniality, and heteropatriarchy as the central axes through which AI Empire functions as a set of technologies, a mode of production, a web of social relations and material resources, a culture, a knowledge base, and a worldview (p. 4).

One of their central points is that assumptions about the inevitability of AI or its assessment through mere technical parameters are trivial and unhelpful. Instead, we should examine AI "as a product of historical, geopolitical, economic, environmental, cultural, racial, gender, and class factors" (Tacheva & Ramasubramanian, 2023, p. 2). Our study's focus on the range of concerns that inform Danish university policies on genAI should be seen as a small contribution to this broader endeavour.

Methodology

To analyse which kinds of concerns and underlying assumptions feed into 'problems' addressed by Danish university policies on genAI, we employ Bacchi's 'What's the Problem Represented to be' (WPR)-approach. This approach is quite popular in (critical) policy analysis and also in our area of interest, technology and AI in higher education (e.g., Linderoth et al., 2024; Luo, 2024; Rahm & Rahm-Skågeby, 2023). Bacchi's central focus, a 'problem', is not seen as "something that is difficult to deal with", nor as a "puzzle or challenge that needs to be 'solved'" but is understood differently as "the kind of change implied in a particular policy proposal" (Bacchi, 2009, pp. x–xi). For example, when a policy on children's screen time is introduced, it suggests that screen time is an underregulated 'problem' for young people that should be fixed by introducing regulation. Yet, by doing so, it also presents something, in a very specific way, that is in fact a very complex issue perhaps not best addressed through reductive screen time rules (Blum-Ross & Livingstone, 2018).

In other words, Bacchi's WPR-approach to policy analysis calls for an interrogation of the ways that policies suggest how 'problems' exist in the world and to how such representations of 'problems' affect how society is governed. Policies do not simply react to external problems but, by addressing certain issues, they unavoidably constitute what counts as a 'problem'. In effect, this means shifting attention away from the policies, as such, towards critiquing their problematisations instead. What do the problem representations conceive of as needing 'fixing'? Which dimensions of the issue are taken into account and what is neglected or made invisible? Which assumptions inform such decisions (Bacchi, 2009, pp. xi–xii)? To systematise the WPR-approach, Bacchi (1999, 2009) formulated six questions (further abbreviated as Q1-6) that can be used to study problematisation in policy analysis:

1. What's the 'problem' (for example, of 'problem gamblers', 'drug use/abuse', 'gender inequality', 'domestic violence', 'global warming', 'sexual harassment', etc.) represented to be in a specific policy or policy proposal?
2. What presuppositions or assumptions underpin this representation of the 'problem'?
3. How has this representation of the 'problem' come about?
4. What is left unproblematic in this problem representation? Where are the silences? Can the 'problem' be thought about differently?
5. What effects are produced by this representation of the 'problem'?
6. How/where has this representation of the 'problem' been produced, disseminated and defended? How has it been (or could it be) questioned, disrupted and replaced? (Bacchi, 2019, pp. 427–428)

After identifying the problem representation (Q1), the next questions dig deeper. While most questions speak for themselves, it is probably necessary to pause at questions two and four. What is important regarding the former is that the WPR-approach is not looking for biases or intentions held by policy-makers but instead tries "to identify the assumptions and/or presuppositions that *lodge within problem representations*" (Bacchi, 2009, p. 5, original italics). For this, Bacchi suggests that focussing on binaries, key concepts and categories within policies can be useful. Studying silences and what is left unproblematic (Q4) can be done by focusing on the limits in the way 'problems' are represented. For this, we can also draw on our literature review for the broad range of potential issues and concerns that come with (gen)AI.

Similar to other studies based on the WPR-approach (e.g., Linderoth et al., 2024; Luo, 2024; Størup & Lieberoth, 2023), we necessarily focus more on some questions than others. Given our research question, questions 1, 2 and 4 are central. A full answer to Q3 would require an additional analysis beyond the scope of our paper, whilst our response to Q5 can only raise critiques based on the observed limitations and has not empirically

studied all possible effects. The last question (Q6), on the dissemination of the problem representation, also requires a more in-depth analysis. In terms of formatting, we have adopted the style used by the previously mentioned studies using the WPR-approach and present our analysis without subheadings linked to the six questions.

Our research population consists of Danish universities. There are eight such public institutions, which is a good and manageable number for our qualitative interpretive policy analysis. What makes this context also relevant is that, alongside the five 'general' universities that offer programmes across the board (University of Copenhagen, Aarhus University, Southern Denmark University, Roskilde University, Aalborg University), there are also three more specialised universities (Denmark's Technical University, IT University, Copenhagen Business School). This adds to the diversity of our sample, and it allows us to consider whether these latter, more engineering, technology and business-oriented institutions, possibly have different orientations towards the use and regulation of genAI in education.

The data used includes the eight universities' webpages with policies and guidelines on genAI. We consulted both the Danish and English language version of the websites to make sure that we found all relevant information. Most institutions make this information publicly available, either in studies-related sections (exam regulation, teaching guidelines) or, in the case of Roskilde University, also in library pages. In the case of the University of Copenhagen, this information was locked in its intranet but, as employees, we both have access. In the case of the IT University, though, little to no information could be found in terms of policies or guidelines and it is unclear to us whether their intranet includes more policies. The only publicly available information is a newsletter item[1] by the Dean for Education, in which she explains what ChatGPT is and what the university's stance on its use is. As they have been very open to its use from the beginning, also in exams, it might explain why no separate web pages or new exam regulations have been put into place (at least, not available to the public).

One important issue regarding our data is, of course, that these policies are dynamic and, in most cases, have been updated since the first version appeared. As the original guidelines are hard to track down in order to contextualise the analysed policies, we also conducted a complementary database search (Infomedia, 1 October 2022 to 16 February 2024) for news articles that mention early approaches to genAI on the part of universities or changes in their policies. To further guarantee the quality of our analysis, the authors first analysed the documents individually, using Bacchi's framework included above. We then discussed our findings together and synthesised them into the next section.

Results

The three stages of introducing university policies mentioned earlier correspond to the general pattern observed in Denmark (Xiao et al., 2023). Yet the first 'waiting' phase at the

end of 2022 should not mislead us into thinking that there was only passivity. Soon after the public launch of ChatGPT-3, universities were obtaining legal and expert advice, while they also held internal as well as external negotiations with other Danish universities. In January and February 2023, all but one university announced 'bans' of some sort. During this second phase, most universities chose to ban genAI for both exams with and without 'aids' (i.e. laptop or internet connection), whereas the University of Copenhagen only installed a full ban regarding exams without aids and left it up to the individual teacher for those exams where aids are allowed. The IT University preferred to have no general bans at all and left it fully up to the individual course leaders (Baltsen Bøgeholt, 2023).

During the third phase of 'embracing', and following more conversations between universities, including through the newly-erected Expert Group set up by the Minister of Children and Education to examine the use of genAI in education (June 2023), bans were mostly done away with or at least relaxed. Bans were turned into guidelines on 'proper use' (e.g. mentioning ChatGPT as a source or aiding tool), the decision (how) to use genAI in teaching and exams was, to some extent, delegated to individual course leaders, and several university websites started including examples of genAI applications in teaching (e.g., how to use ChatGPT for feedback (University of Copenhagen)). Many courses for both staff and students on how best to use genAI also emerged around Denmark. In a way, we could perhaps even observe how genAI had transformed from being seen mostly as a 'threat' to academic integrity (phase two) into some sort of 'asset' (phase three). For example, after the winter exams in 2023, Aarhus University announced that its rules around the use of genAI were being relaxed 'because they need to follow society's development' (Petersen, 2024). In other words, being (seen to be) up-to-date or 'cutting edge' can be a competitive quality in the higher education landscape and form part of a strategy to attract students while also being attractive to potential employers and partners in industry and beyond. The hype factor around genAI is certainly no stranger to this.

Zooming in on the policies and guidelines of the eight Danish universities, a first observation is that the quantity of information included varies considerably. Most universities offer whole sections or at least extensive web pages with several expandable submenus on genAI and education. The University of Copenhagen, for instance, includes in its 'Teaching portal' a section entitled 'ChatGPT and AI'[2], which then has eight subpages ranging from 'Guidelines and rules for using ChatGPT and similar technologies at UCPH' to 'ChatGPT and didactics at UCPH', 'The technology behind ChatGPT' and 'Three approaches to ChatGPT'. At the Southern Denmark University, the information is contained in a single page[3], while at the IT University, as mentioned, much less (and almost no) information is made publicly available.

This brings us to the core of our analysis, namely the problematisation implied in the policies and guidelines. Generally, our analysis shows that, in terms of Bacchi's first question (Q1): what is the problem represented to be in a specific policy (proposal), the current policies express three key concerns: exam integrity, legality of data, and verac-

ity. In addition, some individual university policies mention a few extra concerns such as equality and fairness. The first widely-shared concern that informs the supposed need for implementing policies is, unsurprisingly, exam or assessment integrity. As most exams are set up to assess a student's mastery of a certain body of knowledge and/or skill(s), the authenticity of the submitted assessment object or performance is seen as crucial. Consequently, several universities incorporated their original genAI policies into exam regulations and rules around plagiarism (Q3). Roskilde University, for example, phrased it as follows: "If you use AI in connection with your exam, this will be considered exam cheating, since you have not solved your assignment independently and individually."[4] As Luo (2024) pointed out, however, such approaches are underpinned by assumptions (Q2) that 'originality' or 'authenticity' imply the exclusion of external tools, whereas an alternative understanding could be that knowledge production today involves mediation by and collaboration with certain technologies. The phase of 'embracing' may, to some extent, have been informed by these latter ideas since complete bans have been substituted with more flexible and open approaches to the use of genAI for exams and dissertations. What obviously also inspired the Danish universities to further embrace genAI was the acceptance of the 'inevitability' of the technology and the pressure from students, employers and politicians to deliver graduates to the labour market who can work with genAI (Q2).

One likely explanation for how this representation of the first 'problem' came about (Q3) is that, with the breakthrough of a seemingly high quality LLM, ChatGPT, text production for assignments and exams could very easily be outsourced at literally no financial cost. The practice is obviously not new, as the existence of professionals who write paid essays and dissertations for students is no secret, but with ChatGPT this practice was radically democratised, resulting in a 'moral panic' that needed addressing through new, or at least adjusted, exam policies. Yet what these policies did (Q5) was, certainly in the beginning, more anticipatory and preventive than necessarily corrective of a situation that was actually problematic. There was the potential that students would cheat or commit plagiarism but the actual number of cases was still very small and mostly unknown (TV 2, 2023). As such, we could say that the initial bans in particular implicitly expressed distrust of students and their learning practices, whilst an additional effect was that they cast a rather negative light on the new technology. In sum, following Bacchi, although the universities were trying to 'solve' or at least address a 'problem', the focus on assessment integrity also co-constituted the 'problem' of ChatGPT as a tool for cheating and committing plagiarism (Q5). In the process, the latter's meaning is also stretched because the use of text generated by a LLM (not directly taken from an existing source or from an individual) poses a new situation that, to some extent, defies the then existing legal frameworks and asks questions about the boundaries of concepts such as authorship (Lund & Naheem, 2024).

The second problematisation that we can find in the Danish university policies concerns legal questions around data (Q1). Keywords here are privacy, copyright and GDPR.

The 'problems' that inform policies in this regard are questions around confidentiality and assumptions of misuse of inputted data together with a perceived lack of transparency around such issues. The fact that OpenAI's user agreements indicate that inputted data can be used as training data, for example, puts several of the Danish universities on alert (Q5). On this basis, the University of Copenhagen has a section on GDPR that stresses that the institution has "no data processing agreement or any other agreements with OpenAI" and that therefore "the tool is not part of the (approved) software package that UCPH offers to students and/or staff."[5] The section continues that this implies that neither the university nor its staff can require its students to make use of ChatGPT and that such a decision "should always be voluntary and with the option to opt out without negative consequences for the student." This is echoed by the Southern Denmark University, with the difference that the mention of the voluntary use is followed by "although this is recommended."[6] Starting from the same concerns, both the Danish Technical University and the Copenhagen Business School take a different approach by actively discouraging the use of ChatGPT. Instead, they signed a licence agreement with Microsoft to allow all staff to use Copilot (previously called Bing Chat Enterprise). This guarantees that data will not be appropriated or used to further develop the chatbot.

Based on this observation, two further aspects need addressing. On the one hand, it is telling in this context how several of the policies often mention ChatGPT instead of or next to "genAI" or other applications such as Google's Bard and others – see above for examples from the University of Copenhagen's website, or the fact that Aarhus University even includes a link to OpenAI's ChatGPT in its guidelines (Q1). ChatGPT is so dominant that it seems to have become a so-called generic trademark whereby one brand has come to stand for a product category. Apart from the two universities that exclusively use Microsoft's Copilot, the other institutions are moderately to strongly oriented towards ChatGPT, despite the legal concerns.

On the other hand, notwithstanding the echoes of broader critiques such as surveillance capitalism (Zuboff, 2019) or data colonialism (Couldry & Mejias, 2019) in the policies' concerns about data appropriation and GDPR, they lack attention to the fundamental problems of which these concepts make us aware (Q4). The university policies and guidelines do not refer to the business models, the systematic data extraction that fuels (gen)AI, nor the deeply unequal power relations that this large-scale deployment of datafication and AI entails. In effect, the policies accept the status quo and adjust the university's operations to enable and smoothen its participation in what is understood as an inevitable process of innovation and technology-driven development (Q5). This observation is in line with an earlier study by Paris et al. (2022) on their university's adoption of online market-driven learning platforms and how power inequalities and exploitation were thereby ignored.

The third problematisation relates to veracity (Q1). GenAI is problematised because its output might not be factual or 'truthful' (see also Munn et al., 2023), may contain

errors but also biases (e.g., Bender et al., 2021). All available Danish university policies contain warnings regarding these issues. Aalborg University, for example, mentions in its guidelines that genAI can "hallucinate" and that a user should therefore be critical of its output.[7] Not all policies add explanation as to why this occurs though, except for the University of Copenhagen, which has a section on 'The technology behind ChatGPT'. Despite a clear awareness of these issues, it is no reason to discourage or ban the use of these technologies and the responsibility is left with the individual user. This relates to an implied 'solution' in the policies, namely critical literacy and source critique, both skills that are supposed to be acquired or further improved through courses designed around the use of genAI. Yet this is a very difficult task that is often left to the teachers or to institutional initiatives yet to be developed. Ultimately, this faith in (future) users' critical skills development puts too great an onus on the students while, at the same time, leaves questions around the reproduction of inequalities through repeatedly biased and discriminating output untouched (Q4). An additional potential effect of the framing of this problem is that using labels such as 'hallucinations' for fabricated and/or erroneous output could give the impression that the rest of the output is less or not potentially problematic (Q5). Nonetheless, when the synthetic text is based on the predictive co-occurrence of words instead of on the words' meaning or the writer's 'understanding' (e.g., Chavanayarn, 2023), more caution is perhaps not a luxury, no matter how 'human-like' or prosaic the output may appear.

An important implication of the three previous problematisations is that, together, they strongly shift the emphasis towards the symbolic and epistemological (Q1). The materiality of genAI is largely invisible in the policies (Q4). This helps explain why questions around the labour (for example, annotation labour, see above) that makes the cogs of AI turn or questions around energy and ecology do not feature. One could object that policies or guidelines are perhaps not the best place to address such issues, since universities or their staff and students have no control or say over this. However, we wish to argue that such concerns should form part of the decision-making process on (not) using genAI just as much as do concerns around data legality or the veracity and bias of its output. The input beyond data, and in terms of energy consumption and extraction of minerals and other natural resources, as mentioned above, is in our view perhaps an even greater and more pressing concern in times of climate emergency and environmental breakdown. As Bender et al. (2021, p. 610) unmistakably phrase it: "At the scale we are discussing (...), the first consideration should be the environmental cost." It is already considered when universities draft travel policies for their staff, for example, and such environmental and broader sustainability considerations should equally inform choices in the area of educational technologies (EdTech) as well as other technologies beyond education (e.g., research or administration).

Next to the three central concerns discussed thus far, some of the Danish universities include additional elements (Q1). A minor one is that Aalborg University has some

specific instructions on the use of sound, images or video, for example. Next, under the heading 'ChatGPT and didactics at UCPH', the University of Copenhagen provides four examples of how staff have implemented genAI into their teaching to date. Aarhus University complements this by adding a bottom-up perspective through including a list of examples of how genAI can be useful to students. Interestingly, this is completed by a list of worries that students have around the use of genAI in education[8]. One of their worries is that they might be wrongfully accused of using genAI to cheat in exams. For the purposes of our article, these elements highlight that the problematisations found in university policies are mostly informed by top-down concerns and could do more to integrate those that are bottom-up (Q4). They also highlight, however, the fact that an area for further exploration could be how disputes around suspected misuse of (gen)AI could or should be settled and by whom – this could apply both to staff's suspicions of misuse by students and to students' objections of staff using genAI for certain purposes (e.g. assessment). There are clearly several grey areas in terms of its applicability and degree of use that are hard to standardise or regulate through policies and guidelines.

Another additional concern is that several of the Danish university policies mention the importance of equality and fairness (notably the University of Copenhagen and Copenhagen Business School) (Q1). Copenhagen Business School and Denmark's Technical University strive to attain equality by providing all their members with universal and equal access to Copilot. On the University of Copenhagen's pages, it is stressed that "AI technologies should be designed to ensure users' equal opportunities to get equally good results when using the technology." The text continues that "the technology should not favour certain groups or give some users more useful or positive results than others (e.g. due to gender, age, geographical, social or ethnic origin)."[9] While this phrasing leaves the door open for interpreting fairness and equality not only in terms of genAI's output but also in terms of usability and accessibility of the technology, the next sentences stressing LLM's "results" or explaining inequality by referring to "unconscious bias" in training data leading to lack of representativeness seem to shut that door again (Q4). In this context, it is important to highlight the (techno)ableism that informs much of the design and implementation of technologies and (gen)AI in particular (Shew, 2020). The implied or imagined user is most often not 'disabled' although a proportion of university staff and students are and are thus affected by the technologies' affordances that exclude those groups from (fully) using them (Q5).

Conclusion

Our study of Danish university policies on genAI indicates that their regulations mostly follow mainstream approaches to rethinking assessment and rules on cheating and plagiarism in order to prevent legal issues or breaches around privacy, copyright and GDPR, and to warn users about concerns regarding veracity and bias. It was shown how the

three main problematisations constituted in the policies and guidelines logically follow from the multifaceted context of student evaluations, employability demands, data extraction, legal standards and bias and discrimination. Yet we have also demonstrated how these policies construct specific 'problems' in certain ways and in relation to certain 'solutions' which, together, omit alternative dimensions of the respective concerns. The policies mostly neglect concerns raised by critical AI studies on the lasting effects of AI in education, the technologies' materiality, their broader political economic as well as environmental contexts. Some of the consequences of the particular problematisations and corresponding assumptions and silences, especially in the beginning, are that the policies revealed some distrust on the part of students but also that they tend to support the status quo. Instead of questioning systemic issues, the onus is put on the individual, for example by relying on the users' (potential) critical skills. The policies do not question the political economy of AI beyond data extraction, nor how biased output forms part of systematic inequalities, nor genAI's detrimental planetary impact. This paper has nevertheless argued that including considerations of sustainability in universities' decision making regarding the rejection or use of certain (educational) technologies should be equally self-evident as it is today in other areas such as travel and financial investment. In this light, the decision by two universities to actively discourage the use of ChatGPT in favour of Microsoft's Copilot can be seen as a small and positive but also largely insufficient step towards sustainable and responsible use of AI.

These critical remarks are not meant to point fingers at individual universities but are rather an invitation for a constructive conversation, and for the further improvement and expansion of policies that have been a work-in-progress since their inception. Such conversations would also benefit from a greater acknowledgement of societal and humanistic perspectives on AI and education, as they are currently largely overshadowed by technological aspects (Linderoth et al., 2024). Certain imaginaries of society, collectivity, and education are not only following the advances in technology but are co-created with historically situated and politically charged developments (Rahm & RahmSkågeby, 2023). Tacheva and Ramasubramanian (2023, p. 11) therefore argue that "we must form collective movements to dig deep, uproot these intersecting systems, and critically evaluate the often-unquestioned assumption that technological progress is synonymous with social and planetary good."

Along these lines, some scholars suggest expanding academic networks and focussing on cross-institutional, cross-disciplinary, and cross-national forms of community to enhance the discussion on the role of genAI in higher education (Mills et al., 2023). Although open practices do not support social justice by themselves, they can allow faculty from under-resourced institutions to participate actively in the response to AI, with a broader representation of social and political perspectives. This would enable not only crowdsourcing of syllabus policies and creative pedagogies but also students, whose voice in this matter is not given enough value, to be involved (Sullivan et al., 2023). In this

sense, it would be meaningful to work with 'temporary policy' (Mills et al., 2023) – an idea of community-based policy that constantly adjusts to the shifting landscapes of AI in education.

Finally, our study and some of its limitations also hint at opportunities for future research. Methodologically, our analysis looked at Danish university policies as outcomes, which necessarily limits the ability to say much in response to Bacchi's third question on how the representation of the 'problem' came about. Additional research, for example through interviews with universities' policy makers and archival studies, is therefore recommended. In terms of scope, while we focused on LLMs, (audio)visual AI needs more attention – not only in educational contexts but also when we consider deepfakes and their potential impact on democracy, for example (e.g., Pawelec, 2022). In addition, although the focus in our cursory exploration of news articles on genAI was limited to articles on policy and especially exam policy, the data showed several other dimensions that would merit a more in-depth examination in future studies. The analysis of the different positions in the public debate on whether (higher) education should allow genAI and specifically LLMs into teaching and for what reasons is worth pursuing in particular. We found quite contradictory standpoints in different newspapers on this matter, and it would be relevant to find out which kinds of arguments and metaphors (e.g., 'genAI are as inevitable as calculators or computers') were picked up by others and made an impact.

Notes

1 See https://itustudent.itu.dk/-/media/ITU-Student/Your-Programme/Deans-Digest/Deans-Digest-Issue-February-2023_ChatGPT---here-I-come-pdf.pdf
2 See https://kunet.ku.dk/work-areas/teaching/digital-learning/chatgpt-and-ai/Pages/default.aspx
3 See https://mitsdu.dk/da/mit_studie/bachelor/ha_soenderborg/vejledning-og-support/aipaasdu
4 See https://intra.ruc.dk/nc/dk/for-studerende/alle-studier/den-humanistiske-bacheloruddannelse/faelles-information/undgaa-plagiat/ (translated quote from version accessed on 13/01/2024).
5 See https://kunet.ku.dk/work-areas/teaching/digital-learning/chatgpt-and-ai/guidelines-and-rules-for-chatgpt/Pages/default.aspx (last accessed 21/02/2024).
6 See https://mitsdu.dk/da/mit_studie/bachelor/ha_soenderborg/vejledning-og-support/aipaasdu (last accessed 21/02/2024, quote translated from Danish to English by the authors).
7 See https://www.studerende.aau.dk/praktisk/it/generativ-ai-pa-aau#hvad-skal-jeg-v%C3%A6re-opm%C3%A6rksom-p%C3%A5?%C2%A0- (last accessed 21/02/2024).
8 See https://educate.au.dk/it-i-undervisningen/gai-og-chatbots (last accessed 21/02/2024).
9 See https://kunet.ku.dk/work-areas/teaching/digital-learning/chatgpt-and-ai/challenges-and-risks/Pages/default.aspx (last accessed 21/02/2024).

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