

## Memo on ChatGPT

Contemporary advances in Artificial Intelligence (AI), especially in the form of enhanced Large Language Model (LLM) neural networks, offer both opportunities and challenges for higher education.<sup>1</sup> To what extent the advantages and disadvantages of any such reinforced deep-learning machine warrant its use for student assignments, has become a salient question with Microsoft backed OpenAI's public release of ChatGPT last autumn. Up to certain levels, teachers and students have already found this 'Generative Pre-trained Transformer' a convenient aid in producing papers,<sup>2</sup> and able to pass Business Administration, Law, Medical Sciences, English Language, International Studies and other exams –<sup>3</sup> although not yet French Philosophy!<sup>4</sup>

Pending more structural higher education reform proposals expected over summer, the Dutch Minister of Education is leaving it up to degree programmes themselves to weigh this new technology's benefits and harms.<sup>5</sup> To the extent that these call for safeguarding assessment quality at Campus Fryslân, this responsibility falls to our Board of Examiners.<sup>6</sup> Taking note of the public debate as it unfolded in the general and university press during the past semester,<sup>7</sup> as well as similar initiatives at other University of Groningen faculties,<sup>8</sup> we therefore propose four measures in response, pertaining to penalties, design, teaching, and literacy, each of which we subsequently explain, and intend to review as our continued monitoring finds that new insights or changing circumstances demand it.

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<sup>1</sup> Sija van den Beukel, Eredocentor Chris Manning: 'Taalmodellen schrijven geloofwaardig, maar niet per se de waarheid.' Folia, 9 January 2023; Welmoed Visser, Gaat de computer de wetenschapper vervangen? Advavas, 25 January 2023.

<sup>2</sup> Alex Hern, 'AI bot ChatGPT stuns academics with essay-writing skills and usability.' The Guardian, 4 December 2022.

<sup>3</sup> Rob Dekkers, De impact van een nieuwe 'schrijfbrobot.' 'Ik heb ChatGPT een tentamen laten maken. Het haalde een negen!' Univers, 15 December 2022; Joran Neyen, ChatGPT: vriend, vijand of fraude? 'Ik kreeg een dikke voldoende.' Mare, 26 January 2023; Mark Sellman, Is ChatGPT too clever by half? The Times, 28 January 2023; Matthew Cantor, This economist won every bet he made on the future. Then he tested ChatGPT. The Guardian, 7 April 2023; Oliver Hodges, ChatGPT didn't just pass Leaving Cert higher English, it got 77%. The Times, 20 May 2023; Bennie Mols, AI ChatGPT lijkt misschien slim, maar is niet echt intelligent. NRC, 17 June 2023.

<sup>4</sup> Charles Bremner, Cleverest chatbot flunks French philosophy exam. The Times, 16 January 2023.

<sup>5</sup> Ardi Vleugels, 'Met AI gaat het onderwijs per direct en radicaal op de schop.' Het Financieel Dagblad, 23 May 2023.

<sup>6</sup> Our Board of Examiners (BoE) is the governance body which objectively and professionally determines if students acquired the knowledge, insight, and skills which the Teaching and Examination Regulations (TER) establish as criteria for receiving their degrees. Its members are appointed on the basis of their expertise in areas of our programmes by the Faculty Board, which safeguards their independent and competent functioning. To conduct examinations and determine their results, the BoE appoints Examiners, who provide it with any requested information. The BoE safeguards the quality of these examinations and their administration and procedures, and provides guidelines and instructions to assess and determine their results. Furthermore, it decides on granting students permission for, or exemption from, certain examinations, takes or proposes disciplinary measures if they conduct fraud, and issues certificates as proof of their passed examinations. These duties and powers are established by the Dutch Law on Higher Education and Scientific Research (WHW), and further specified in the TER and BoE's own rules and regulations. The work of the BoE is additionally informed by the university's assessment policy and good practices.

<sup>7</sup> This memo was prepared by BoE member Tim Huisjes, and informed by a review of articles from English and Dutch language quality newspapers and top university magazines to which Lexis Uni provides access, Dutch university press indexed by Google News, and the University of Groningen's Ukrant, as well as internal briefings from its Educational Support and Innovation department, including sources referenced in these texts, since November 2022. As relevant insights from studies in the educational sciences become available, they may further and more academically inform the implementation of its suggestions.

<sup>8</sup> Internal communication and interview.

## 1. Penalties

**From the start of the new academic year onwards, we consider the use of ChatGPT and similar tools in any (partial) examination a form of cheating, unless that usage is explicitly warranted in the applicable Teaching and Examination Regulations (TER), Assessment Plan (AP), or Course Syllabus (CS), and decide about appropriate penalties on a case-by-case basis in accordance with our Rules and Regulations.**

While natural language processing (NLP) techniques and LLMs can increase access to sources and collaboration between tongues through writing and speech translation services, they also enable the generation of text without regard for intellectual property and personal privacy rights over their sourced programming material. Commercialization of these innovations has already provoked the first private actions as well as public investigations,<sup>9</sup> and has been eloquently called out by Naomi Klein as ‘the largest and most consequential theft in human history [b]ecause what we are witnessing is the wealthiest companies in history (Microsoft, Apple, Google, Meta, Amazon ...) unilaterally seizing the sum total of human knowledge that exists in digital, scrapable form and walling it off inside proprietary products, many of which will take direct aim at the humans whose lifetime of labor trained the machines without giving permission or consent.’<sup>10</sup> Whether these contentions have merit is relevant to establishing if appropriating text generated in such a way amounts to plagiarism, which we define as ‘copying your own or someone else’s work without correctly acknowledging the source.’<sup>11</sup>

Lack of consensus on this point has led administrators at Cornell University to explicitly extend the definition of plagiarizing to ‘stealing (...) machines’ words,<sup>12</sup> and others to consider it as a related but different kind of cheating under the label ‘AIgiarism.’<sup>13</sup> Until (or unless) this debate is settled, we tend to agree with the editorial board of the Johns Hopkins University newsletter that ‘AI blurs the lines

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<sup>9</sup> Madhumita Murgia and Ian Johnston, Art and artificial intelligence collide in landmark lawsuit over copyright. The Financial Times, 21 January 2023; Frances d’Emilio and Matt O’Brien, Italy temporarily blocks ChatGPT over privacy concerns. Associated Press, 31 March 2023; Dan Milmo and Alex Hern, UK watchdog warns chatbot developers over data protection laws. The Guardian, 3 April 2023; Byron Kaye, Australian mayor readies world’s first defamation lawsuit over ChatGPT content. Reuters, 5 April 2023; Alex Hern and Dan Milmo, ‘I didn’t give permission:’ Do AI’s backers care about data law breaches? The Guardian, 10 April 2023; Aleksandra Krzysztozek, Anne-Sophie Gayet, Clara Bauer-Babef, Fernando Heller, Goran Ivanovic, Oliver Noyan, Pekka Vanttinnen, and Théo Bourgerie-Gonse, ChatGPT sparks data protection debate in Europe. Euractive, 14 April 2023; Marjolein van Trigt, Europese toezichthouder buigt zich over ChatGPT. Binnenlands Bestuur, 16 April 2023; Mike Isaac, Reddit Wants to Get Paid for Helping to Teach Big A.I. Systems. The New York Times, 18 April 2023; Kevin Schaul, Szu Yu Chen, and Nitasha Tiku, Inside the secret list of websites that make AI like ChatGPT sound smart. The Washington Post, 19 April 2023; Jorit Verkerk, Nieuwe nummer met de stemmen van Drake en The Weeknd blijkt gemaakt door AI: mag dat zomaar? NRC, 19 April 2023; Dan Milmo, UK competition watchdog launches review of AI market. The Guardian, 4 May 2023.

<sup>10</sup> Naomi Klein, AI machines aren’t ‘hallucinating.’ But their makers are. The Guardian, 8 May 2023.

<sup>11</sup> Board of Examiners, Rules and Regulations. University of Groningen Campus Fryslân, 2023.

<sup>12</sup> Sofia Robinson and Aimée Eicher, A Year in Review With President Martha Pollack. Cornell Daily Sun, 8 May 2023. The universities of Utrecht and Twente have considered similar changes: Xander Bronkhorst, Universiteit scherpt plagiaatregels aan om ChatGPT. DUB, 19 January 2023; Stan Waning, UT onderzoekt plagiaatregeling door komst ChatGPT. Utoday, 2 February 2023, although the former has since reverted to leaving this up to the faculties and degree programmes: Xander Bronkhorst, Geen UU-brede aanpassing plagiaatregels om ChatGPT. DUB, 14 February 2023. At the University of Amsterdam, both ChatGPT and its prompter have been suggested as copyright holders to be cited in such text: Dirk Wolthekker, UvA-hoogleraren zijn ‘wijs en geleerd’. Folia, 31 January 2023.

<sup>13</sup> Alex Hern, AI-assisted plagiarism? ChatGPT bot says it has an answer for that. The Guardian, 31 December 2023. For a critical discussion of these platforms as the new ‘knowledge commons,’ see i.a: Bart Jacobs and Margot van Mulken, Heb je een goed idee? Vertel het niet aan Chat-gee-pee-tee! Scienceguide, 4 May 2023.

between plagiarism and resourcefulness,<sup>14</sup> and only rank the undue employment of ChatGPT and similarly advanced chatbots under our current definition of cheating, similar to the unpermitted reliance on calculators, dictionaries, and other resources during an examination, as ‘an act or omission by a student designed to partly or wholly hinder a correct assessment of their own or someone else’s knowledge, understanding, and skills.’<sup>15</sup> In determining consequences, we will follow other Dutch exam committees in considering the extent and circumstances of any such fraud, but not weighing serious misconduct lightly,<sup>16</sup> as it bears heavily on individual and collective academic integrity.

## 2. Design

**In preparation, we request that examiners design assignments to explicitly include the warranted, and preclude unwarranted use of these services, in light of relevant PLOs and CLOs – Programme and Course Learning Outcomes, as well as related developments in associated disciplines.**

While ChatGPT is not the first automated text generator ever employed by students to deliver on projects, its qualities do call into question the appropriateness of current assessment methods.<sup>17</sup> The accessibility which earned it the nickname ‘Windows95 for AI,’<sup>18</sup> indeed draws in many students – a majority at the University of Groningen (UG) by late spring,<sup>19</sup> while teachers cannot always distinguish, let alone detect and prove the artificial origins of their work.<sup>20</sup> Insofar as they can, further upgrades may outpace the awareness, experience, and software which have gradually helped identify cases.<sup>21</sup> A full ban

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<sup>14</sup> Anonymous, Be gone, bot: Don’t use AI to cheat your way through college. The Johns Hopkins News-Letter, 2 February 2023. Also see: Brendan H. O’Connor, Are you part robot? A linguistic anthropologist explains how humans are like ChatGPT - both recycle language. The Conversation, 12 June 2023.

<sup>15</sup> Board of Examiners, Rules and Regulations. University of Groningen Campus Fryslân, 2023.

<sup>16</sup> Mariska van Schijndel, Examencommissies zien ChatGPT als fraude. Erasmus Magazine, 30 January 2023; Mariska van Schijndel, Twee studenten van ESSB worden verdacht van fraude met ChatGPT. Erasmus Magazine, 21 February 2023;

<sup>17</sup> Stephen Marche, ‘The College Essay is Dead.’ The Atlantic, 6 December 2022; Cristina Criddle and Bethan Staton, ‘AI program raises alarm over potential for student cheating.’ The Financial Times, 19 December 2022; Max Kendix, Cheats are prospering in online exam era. The Times, 18 February 2023; Kathryn Parsons, ChatGPT has entered the classroom – and teachers are woefully unprepared. The Times, 6 May 2023.

<sup>18</sup> Marco Visser, Chatrobot ChatGPT is slim, maar begrijpt zijn eigen antwoorden niet. Trouw, 24 January 2023.

<sup>19</sup> Julianne Veltman, ‘ChatGPT is mijn assistent’. Ukrant, 1 February 2023; Lotta Stokke and Eóin Gallagher, ChatGPT is er, deal ermee. Ukrant, 29 March 2023.

<sup>20</sup> Ariën Voogt, ‘Ook als AI onze teksten schrijft, moeten we zelf blijven leren denken.’ NRC, 15 December 2022; Pepijn Stoop, Maakt ChatGPT straks onze tentamens? Folia, 6 January 2023; Mark Allen Cu and Sebastian Hochman, Scores of Stanford students used ChatGPT on final exams, survey suggests. The Stanford Daily, 22 January 2023; Jelle Posthuma, ChatGPT fails UT lecturer’s exam question. Utoday, 21 February 2023; Laurence Sleator and Michael Hennessey, ChatGPT used for degree by half of Cambridge students. The Times, 22 April 2023; Amanda Mull, Chatbots Sound Like They’re Posting on LinkedIn. The Atlantic, 25 April 2023; Pepijn Stoop, Made in Silicon Valley, 25 April 2023; Suzanne de Winter, Studenten laten ChatGPT massaal hun verslagen schrijven: ‘Plagiaat is een groot begrip’. Algemeen Dagblad, 8 June 2023.

<sup>21</sup> Julian Hartman-Sigall, Edward Tian ‘23 creates GPTZero, software to detect plagiarism from AI bot ChatGPT. Princeton Daily, 18 January 2023; Sophia Khatsenkova, ChatGPT: Is it possible to detect AI-generated text? Euronews, 19 January 2023; Robin van Rossum, Betrap! Zwols bedrijf maakt tool om te checken of je tekst door ChatGPT is geschreven. Algemeen Dagblad, 27 January 2023; Matt O’Brien and Jocelyn Gecker, Cheaters beware: ChatGPT maker releases AI detection tool. Associated Press, 31 January 2023; Laurens Verhagen, Maker ChatGPT biedt detectiegereedschap aan voor AI-teksten. De Volkskrant, 1 February 2023; Anita Vliegenberg, Is dat door een student of door ChatGPT geschreven? Ict-studenten maken hulpmiddel voor docenten. Algemeen Dagblad, 7 February 2023; Educational Support and Innovation (ESI), Internal Presentation Boards of Examiners Intervention Meeting. University of Groningen, 27 March 2023; Keith Collins, As A.I. Text Detection Gets Better, So Does A.I. Text. The New York Times, 27 February 2023; Tiffany Hsu and Steven Lee Myers, Another Side of the A.I. Boom: Detecting What A.I. Makes. The New York Times, 18 May 2023; but cf. Jacob Stern, GPT-4 Might Just Be a Bloated, Pointless Mess. The Atlantic, 6 March 2023, and note that it can lead to false positives and infringement on students’ data protection rights: Bethan Staton, Doubts raised on anti-plagiarism tool. The Financial Times, 4 April 2023; Caitlin Cassidy, Australian universities split on using new tool to detect AI plagiarism. The Guardian, 16 April 2023.

alone might then have the unsolicited effect, as one student aptly noted, that it ‘punishes honest students and rewards unscrupulous ones.’<sup>22</sup> This concern has prompted calls upon universities to safeguard evaluation against deceit through the innovation of assessment modes too.<sup>23</sup>

Responses have been mixed. First to answer was a group of Australian universities, which has radically reverted to supervised, in-class, handwritten exams.<sup>24</sup> Others chose to permit ChatGPT’s disclosed usage under strict conditions.<sup>25</sup> More intricate measures proposed include the design of so-called AI-proof assignments, increased oral examinations, and strengthening academic honesty regulations, instructions, and commitments.<sup>26</sup> In the wider educational sector, major academic publishers, journal editors, and conferences have started to ban or restrict the co-authorship of ChatGPT in scientific articles,<sup>27</sup> but simultaneously Khan Academy, DuoLingo, and other companies are eagerly incorporating such AI-tools in their teaching and assessment,<sup>28</sup> in response to their traditional business models being upended by the general availability of these aids.<sup>29</sup> Until a widely accepted set of good practices can be identified,<sup>30</sup> and duly considering the multidisciplinary constitution of our faculty, we therefore follow the University of South Carolina in leaving faculty the choice to ‘discourage and detect’ or ‘embrace and enhance’ engagement with these high-level conversational chatbots,<sup>31</sup> in line with their respective disciplinary fields.

In making that choice, the advice given to faculty by Princeton University deans may prove helpful: “Be Explicit/Avoid Misunderstandings,’ ‘Explain Your Pedagogical Rationale,’ ‘Design Assignments with Care,’ and ‘Teach Your Students What AI Can and Can’t Do.’<sup>32</sup> Additional inspiration may be drawn from lecturers who already encourage the use of ChatGPT and other AI tools,<sup>33</sup> as well as the discussion taking

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<sup>22</sup> Jack Kubinec, Dear Professors: Stop Banning ChatGPT. The Cornell Daily Sun, 2 February 2023.

<sup>23</sup> Anonymous, ‘Universities warned of AI program that raises risk of student cheating.’ The Financial Times, 24 December 2022; Marc Horne, Cheats who use AI platform risk disgrace, universities say. The Times, 21 February 2023; Anonymous, As AI advances, instructors should adjust teaching methods to combat misuse. Daily Bruin, 7 April 2023.

<sup>24</sup> Pepijn de Lange, Australische studenten moeten examens weer met pen en papier maken vanwege AI-schrijfbot ChatGPT. De Volkskrant, 10 January 2023.

<sup>25</sup> Tory Shepherd, South Australian universities to allow use of artificial intelligence in assignments, if disclosed. The Guardian, 21 January 2023. As has the International Baccalaureate: Dan Milmo, ChatGPT allowed in International Baccalaureate essays. The New York Times, 27 February 2023; Nicola Woolcock, International Baccalaureate lets pupils use ChatGPT to write essays. The Times, 27 February 2023.

<sup>26</sup> Kalley Huang, Alarmed by A.I. Chatbots, Universities Start Revamping How They Teach. The New York Times, 16 January 2023.

<sup>27</sup> Sjoerd de Jong, AI-kenners moeten hun tekst zelf schrijven als ze naar Hawaï willen. NRC, 18 January 2023; Ian Sample, Science journals ban listing of ChatGPT as co-author on papers. The Guardian, 26 January 2023; Bart van den Dikkenberg, Wetenschap onder spanning door corruptie en ChatGPT. Reformatorisch Dagblad, 3 February 2023; Anjana Ahuja, Generative AI is sowing doubt in serious science. The Financial Times, 1 March 2023.

<sup>28</sup> Cade Metz, OpenAI Plans to Up the Ante in Tech’s A.I. Race. The New York Times, 14 March 2023; Madhumita Murgia, OPENAI hails ‘human-level’ performance of new system. The Financial Times, 16 March 2023; Peter Coy, A.I. Could Actually Be a Boon to Education. The New York Times, 3 May 2023.

<sup>29</sup> Dan Milmo, AI race is disrupting education firms – and that is just the start. The Guardian, 3 May 2023.

<sup>30</sup> Wilma Heesen, Maakt student gebruik van ChatGPT? Prima, maar wel met een kritische blik. Ukrant, 31 January 2023.

<sup>31</sup> Mateo Villalba-Mutis, USC adjusts to generative AI in academia. Daily Trojan, 6 March 2023.

<sup>32</sup> Julian Hartman-Sigall, University declines to ban ChatGPT, releases faculty guidance for its usage. Daily Princetonian, 25 January 2023. This advice was echoed within Utrecht University: Xander Bronkhorst, Geen UU-brede aanpassing plagiaatregels om ChatGPT. DUB, 14 February 2023.

<sup>33</sup> Mannus van der Laan, ChatGPT: taalwonder zonder benul. Dagblad van het Noorden, 18 January 2023; Mariska van Schijndel, In deze minor moeten studenten een essay schrijven met ChatGPT. Erasmus Magazine, 8 March 2023; Fabio Yasamin, Docent van Erasmus Universiteit wil dat studenten hun huiswerk juist door ChatGPT laten schrijven. Algemeen

place within and between Dutch universities and the KNAW – Royal Netherlands Academy for Sciences,<sup>34</sup> on the diversification and intensification of formative and summative assessment.<sup>35</sup> To highlight one example from the UG, our Faculty of Arts explicitly offers examiners the option to require an additional oral examination if they suspect the use of ChatGPT in a written assignment.<sup>36</sup> Since last month, the university's department of Educational Support and Innovation (ESI) offers comprehensive support to lecturers here: <https://edusupport.rug.nl/2365784080>.<sup>37</sup>

### 3. Teaching

**As a corollary, we invite the programme directors to engage teachers and students in a discussion on how to critically and constructively engage with these developments as part of their curricula, and review intended learning outcomes in TER, AP, and CS together with the appropriate governance bodies accordingly throughout the upcoming year.**

Potential piracy and plagiarism are not the only problems with the likes of ChatGPT. Concerns have been raised over the environmental unsustainability and social irresponsibility of their demand on energy for computation power and labour for training,<sup>38</sup> paid subscription models that would benefit more affluent students over others,<sup>39</sup> and their misrepresentations as well as reproduction of errors, biases, and horrors contained in the LLM training data.<sup>40</sup> Characterizing the Frisian Eleven cities tour as a cross-

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Dagblad, 13 March 2023; Maurice Timmermans, Hoeveel ChatGPT-fraude hebben de examencommissies al ontvangen? Observant, 15 March 2023; Anonymous, The best AI tools to power your academic research. Euronews, 1 April 2023.

<sup>34</sup> Jan Fred van Wijnen and Ardi Vleugels, 'Artificial intelligence maakt ons onderwijs achterhaald.' Het Financieel Dagblad, 22 December 2022; Mark Misérus, 'Het onderwijs moet aan de slag met de mogelijkheden én de gevaren van kunstmatige intelligentie.' De Volkskrant, 27 December 2022; Rob Dekkers and Adrian van den Eerenbeemt, Wat vinden Tilburgse studenten van ChatGPT? Univers, 20 January 2023; Michele Murgia, ChatGPT is extra teken aan een wand die zwakker wordt. Scienceguide, 23 January 2023; Ken Lambeets, Wat moet de Radboud Universiteit met tekstrobot ChatGPT? Vox, 24 January 2023; Mariska van Schijndel, Met 'superwapen' ChatGPT schrijf je binnen enkele seconden een essay. Erasmus Magazine, 30 January 2023; Sophia van Engelshoven, Wat betekent de komst van ChatGPT voor studenten? ANS, 30 January 2023; Samuel de Weerd, 'ChatGPT gaat niet de wereld overnemen'. DUB, 31 January 2023; Sebastiaan van Loosbroek, De chatbot is niet te stoppen (en docenten zijn verdeeld over wat ze moeten doen). Mare, 2 February 2023; Sophia van Engelshoven, Het Studentenstandpunt: ChatGPT in het onderwijs. ANS, 28 February 2023; Peer van Tetterode, 'ChatGPT kan vooral goed bluffen.' Utoday, 8 March 2023.

<sup>35</sup> Edwin van der Aa, Kunstmatige intelligentie kan snel scripties 'schrijven': 'Zorgelijk als studenten gaan frauderen'. Algemeen Dagblad, 14 January 2023; Joost Ingen-Housz, ChatGPT is omstreden op de universiteit. NRC, 7 June 2023.

<sup>36</sup> Giulia Fabrizi, Mondelinge tentamens in strijd tegen chatbotfraude, maar faculteiten omarmen AI ook. Ukran, 28 February 2023.

<sup>37</sup> Educational Support and Innovation (ESI), Artificial Intelligence (AI) tools in education. University of Groningen, 2023.

<sup>38</sup> Colin van Heezik, Wat is er open aan slimme chatbot-maker OpenAI? NRC, 1 January 2023; Pepijn Stoop, Ja, Shell is vervuילend, maar kijk ook eens naar AI. Folia, 27 January 2023; Billy Perrigo, OpenAI Used Kenyan Workers on Less Than \$2 Per Hour to Make ChatGPT Less Toxic. Time, 28 January 2023; Fabio Yasamin, Grote techdiensten als Amazon en ChatGPT buiten miljoenen onzichtbare thuiswerkers uit. Algemeen Dagblad, 16 March 2023; Rosie Frost, ChatGPT 'drinks' a bottle of fresh water for every 20 to 50 questions we ask, study warns. Euronews, 20 April 2023; Jan Fred van Wijnen, Ontwikkeling AI loopt vast op astronomisch stroomverbruik. Het Financieel Dagblad, 22 May 2023; Lode Lauwaert, Als we het over AI hebben, moeten we het ook over het klimaat hebben, en niet alleen over privacy en discriminatie. Leeuwarder Courant, 15 April 2023; Marieke de Ruiter, Eindeloos stoplichten taggen en praten met Alexa, wie zijn de mensen achter AI? De Volkskrant, 31 May 2023; Frank Straver, Europa wil AI-techniek beteugelen, ook de grote CO<sub>2</sub>-voetafdruk ervan. Trouw, 17 June 2023.

<sup>39</sup> Stijn van Gils, Hoe gaat het bedrijf achter het revolutionaire ChatGPT zijn geld verdienen? Het Financieel Dagblad, 1 January 2023.

<sup>40</sup> Colin van Heezik, 'Als de computer beter wordt met taal dan wij.' NRC, 4 December 2022; Madden Armstrong, Non-Human is Not Neutral: The Ethics of ChatGPT. The Spectator, 1 February 2023; Cade Metz, Why Do A.I. Chatbots Tell Lies and Act Weird? Look in the Mirror. The New York Times, 26 February 2023; Marko de Haan, Als je ChatGPT de Stempijzer laat doen, blijkt het een linkse chatbot te zijn. NRC, 9 March 2023; James Bridle, The stupidity of AI. The Guardian, 16 March 2023; Kevin Roose, A.I. Model Takes Leap, For Good Or for Ill. The New York Times, 16 March 2023; Madhumita Murgia, OPENAI crack unit worked to 'break' ChatGPT. The Financial Times, 15 April 2023; Karen Weise and Cade Metz, When A.I. Chatbots Hallucinate. The New York Times, 1 May 2023. For a list of other current problems associated with AI-tools, see i.a.: David Dao, Awful AI: <https://github.com/daviddao/awful-ai>.

country skiing event,<sup>41</sup> or the modern University of Twente as the oldest of The Netherlands,<sup>42</sup> are among the lesser of these reported evils. The manipulatively conversational and deceptively confident way in which they can present fictions as facts, has earned them the characterization of contemporary Sophists.<sup>43</sup> In light of these concerns, some have warned that such AI applications undermine truth and democracy by further enabling misinformation and manipulation,<sup>44</sup> social inequality and human isolation,<sup>45</sup> as well as industry capture,<sup>46</sup> or pose even more existential threats to humanity.<sup>47</sup>

Offering counterarguments, others point to AI-enabled advances in the natural or medical sciences,<sup>48</sup> and compare their problematization with futile and unfounded reservations about the earlier introduction of the calculator, autocorrect function, and even alphabet,<sup>49</sup> or as one student properly articulated it: ‘When the Mesopotamians invented the wheel, the correct question wasn’t ‘How can we ban these to preserve the old way of dragging our shit from place to place?’<sup>50</sup> Yet others hold the middle ground, proposing to approach ChatGPT with an attitude of ‘constructive distrust.’<sup>51</sup> While it is not for the Board of Examiners to take position in these societal debates, allowing ChatGPT in teaching methods and assessment modes could strain their constructive alignment with intended learning outcomes, which for all programmes reflect the faculty’s commitment to sustainable development in one way or another. Unlike the UG faculty of Economics and Business, which quickly decided to ‘embrace’ the technology,<sup>52</sup> echoed by the university’s rector in a recent interview,<sup>53</sup> CF may therefore wish to take a more cautious approach.

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<sup>41</sup> René Kuipers, Leerlingen besteden schoolwerk uit aan AI-chatbot: ‘Een beoordeling heb ik nog niet, maar ik denk wel dat het een voldoende wordt.’ Leeuwarder Courant, 20 January 2023.

<sup>42</sup> Joost Dijkgraaf, Wat weet wereldberoemde chatrobot over Twente? ‘Máxima is de grootste Tukker’. De Twentsche Courant Tubantia, 15 January 2023.

<sup>43</sup> Wessel Reijer, De hedendaagse sofist; Het gevaar van ChatGPT. De Groene Amsterdammer, 13 April 2023.

<sup>44</sup> Sander Duivestijn and Thijs Pepping, ‘Leg het gebruik van ChatGPT aan banden.’ NRC, 15 December 2022; Matteo Wong, ‘We Haven’t Seen the Worst of Fake News.’ The Atlantic, 20 December 2022; Nathan E. Sanders and Bruce Schneier, How ChatGPT Hijacks Democracy. The New York Times, 15 January 2023; Juurd Eijssvoogel, ‘We moeten technologie anders bekijken. Politieker.’ NRC, 4 February 2023; Maxim Februari, Democratie is geen product, maar een gemeenschappelijk proces. En dat wankelt door AI. NRC, 17 February 2023.

<sup>45</sup> Laurens Verhagen, Hoogleraar computerwetenschappen vreest opmars AI: ‘Wilt u 50 euro extra betalen voor een mens? Toets 1’. De Volkskrant, 16 March 2023.

<sup>46</sup> Madhumita Murgia, AI revolution ‘industrial capture’ risks loss of public control. The Financial Times, 24 March 2023; Leon Dohmen and Arda Gerkens, Als de politiek niet optreedt bepalen AI-technici onze digitale beschaving. Trouw, 20 May 2023.

<sup>47</sup> Eliezer Yudowsky, Pausing AI Developments Isn’t Enough. We Need to Shut it All Down. Time, 29 March 2023; Sja van den Beukel, UvA-wetenschappers ondertekenen open brief: ‘Stop ontwikkeling AI-systemen’, Folia, 31 maart 2023; Ian Hogarth, The dangerous race to God-like AI. The Financial Times, 15 April 2023; Cade Metz, ‘The Godfather of A.I.’ Leaves Google and Warns of Danger Ahead. The New York Times, 1 May 2023.

<sup>48</sup> Joost van Egmond, Kunstmatige intelligentie doktert mee. Trouw, 4 February 2023; Bennie Mols, De volgende Einstein kan een computer zijn, maar hoe lang duurt dat nog? NRC, 22 February 2023; Niki Korteweg, Overal langs zijn behandeltraject komt de patiënt kunstmatige intelligentie tegen. NRC, 22 February 2023; Maarten Keulemans, Wat scheelt eraan, vraagt de AI-dokter. De Volkskrant, 29 April 2023; Chris Impey, Kennis over ons heelal groeit sneller dan ooit - met dank aan AI. Friesch Dagblad, 15 May 2023.

<sup>49</sup> Zeynep Tufekci, ‘What Would Plato Say About ChatGPT?’ The New York Times, 15 December 2022; Camilla Cavendish, CHATGPT will force school exams out of the dark ages: Too much of our testing regime remains fixated on being able to regurgitate information. The Financial Times, 21 January 2023; Ryan Bradley, A Chatbot Is Secretly Doing My Job. The Atlantic, 27 February 2023.

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In absence of sufficient ethical self-regulation by the major service providers,<sup>54</sup> and awaiting further government regulation – called for by a wide variety of societal leaders and opinion makers, but not yet adopted let alone enacted,<sup>55</sup> it is to prevent such misalignment from arising, that we call for a more comprehensive, faculty-wide reflection on the impact of AI on learning objectives, teaching methods, and assessment modes, as a corollary to conditionally permitting ChatGPT. Such considerations should also concern anyone who does not wish to introduce these applications into the classroom, as their distinct functionalities and interfaces are already replacing or being further integrated with those of current operating systems, web browsers, search engines, text editors, and other office software,<sup>56</sup> and when used to prompt online sources, may increasingly encounter (possibly indistinguishable) synthetic material among them.<sup>57</sup>

Futile, to paraphrase various science fiction antagonists since the 1960s in this context, is resistance. Suggested as useful has been reflection on the skills we need to learn and cultivate in order to better engage and distinguish artificiality.<sup>58</sup> Scrutinizing its mimicry could be helped by digital literacy, critical computing, and prompt engineering;<sup>59</sup> learning how to outperform it by less focus on educating and

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testing for formulaic end products, and more reflection on the value of originality, experience, coherence, and understanding, as well as attention for key human processes. For now, these may include personal inquiry, critical thinking, free opinionizing, autonomous research, logical argumentation, moral reasoning, creative problem-solving, transformative innovation, meaningful expression, connecting to audiences, ingenious writing, distinguishing main from side issues, discerning good from bad experiments, perhaps even individual handwriting,<sup>60</sup> and theorizing the principles and mechanisms underlying regularities and patterns,<sup>61</sup> or in the words of Noam Chomsky c.s: insightful explanation based on considering improbable theories.<sup>62</sup> We believe that overall assessment quality will benefit from engaging in such a discussion with students on a basis of mutual trust in each other's intention to openly and responsibly engage AI.<sup>63</sup>

#### 4. Literacy

**In support of these measures, we advise the Faculty Board to prioritize for now, and then structurally support staff training in AI-literacy, without increasing workload.**

Whether lecturers are to prevent, detect, or accept the use of ChatGPT and alternatives in their classes, the associated increase in workload is cause for concern –<sup>64</sup> from our perspective primarily as it may negatively influence overall assessment quality. While some resources such as easy introductory explanations,<sup>65</sup> short overviews of available tools,<sup>66</sup> ready-made lesson plans,<sup>67</sup> and other suggestions are globally available,<sup>68</sup> examiners will need time to learn about, experiment with, and devise policies

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on the use of these technologies in their daily working environment,<sup>69</sup> especially when they are to include students in the latter.<sup>70</sup> This would be an investment not only in keeping our programmes relevant and therefore attractive in preparation for future careers and life in general,<sup>71</sup> but potentially also in the efficiency that application of AI driven student analytics, personalized learning, and automated feedback or even full assessment may bring.<sup>72</sup> In light of the imminent preparations for the next academic year, we advise to prioritize AI-literacy in the short term, and structurally embed this going forward, potentially with the help of our embedded ESI expert, the Teaching Academy's dedicated Community of Practice at the UG, and expertise within our faculty's research departments and educational programmes.<sup>73</sup>

## Going forward

The BoE is confident that these penalties for cheating, changes in course design, discussions on teaching, and improvements of literacy can help assure assessment quality across our programmes in the face of recent AI developments. With the current memo we take our responsibility in this matter, but also stress that upholding the quality of assessment is a joint effort, and invite all students and staff to engage in a continued dialogue on these matters.

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