ARTIFICIAL INTELLIGENCE (AI) IN HIGHER EDUCATION: TOOL OR TRICKERY?

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Abstract

With the release of ChatGPT in November 2022 by OpenAI, the field of higher education was rudely awakened to the revolutionary impact of generative AI on the traditional means of assessing academic performance. New – and ever-improving – "large language models" (LLMs) are now capable of on-demand generation of coherent, comprehensive and academic-grade content - be it in the form of (long-format) text, code or mathematical symbols. Many universities have, as yet, not officially positioned themselves with respect to these new developments and those that have, did so in strikingly diverse ways, from outright bans on any form of AI to investigating how AI can be leveraged by students and staff alike to enhance the academic learning process. This workshop aims to guide participants in the process of 1) gaining awareness of the potential, limitations and pitfalls of AI tools; 2) critically assessing these tools within the framework of participants' (domain-specific) practices for teaching, learning and assessment; 3) comparing observations and sharing opinions with co-practitioners in the domain; and 4) developing a position towards these new technologies and translating this position into (tentative) policy guidelines, either on a personal or institutional level.

Keywords: *Artificial intelligence, generative AI, academic integrity, AI literacies, higher education policy.*

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1. Introduction

Though Artificial Intelligence (AI) has been on the radar of educators for many decades (e.g., Garito, 1991), it was the public release of OpenAI's revolutionary tool ChatGPT in late 2022 that propelled AI to the center of the educational debate. The educational opportunities afforded by such "large language models" (LLMs), but also their inherent dangers, are the topic of intense discussion in blogs, newsletters, social and mainstream media, while research papers – quite understandably given the duteous nature of the academic process – are still relatively scarce. However, given the astonishing scale of student adoption (Cassidy, 2022), institutions of higher education are practically forced their hand to issue policy guidelines promptly. A broadly shared, evidence-based consensus approach is yet to crystallize: some universities have issued outright bans, while others wholeheartedly embrace its affordances for supporting the teaching and learning process.

A review of 100 mainstream media publications on the use of ChatGPT in education by Sullivan et al. (2023) shows that, generally speaking, mention of perceived opportunities and threats is slightly skewed to the negative (with positive n = 912 and negative n = 1034). Apart from the observation that the content generated by ChatGPT is sometimes factually wrong, the most frequently cited threat is the loss of academic integrity, as AI can easily be used as tool for cheating. Many commentators observe that students outsourcing their paper writing to ChatGTP are in fact committing plagiarism. Perhaps even more worryingly, these students are also "cheating themselves out of an education" if they "bypass the learning process" (Brody, 2023). This line of thinking has led some institutions of higher education to respond dismissively to AI in varying degrees, from issuing outright bans over announcing a return to the practice of invigilated exams to encouraging teachers to redesign their assignments so as to "outsmart" ChatGPT.

Some commentators, however, believe that this evasive or suppressive take on AI is ultimately futile. Banning ChatGPT is almost impossible to enforce, as students can easily evade a block on ChatGPT using a VPN. Moreover, given the current rate of progress, it is likely to be an equally losing battle trying to "outsmart" ChatGPT. And most importantly, it is argued, ChatGPT will be part of the workplace anyway, so the focus in education should not be on avoiding AI but rather on teaching students when and how to use it effectively as well as responsibly. Such commentators assert that education should not ostracize AI but rather target the development of AI literacies. The University of Florida, to cite one remarkable example

of this viewpoint, is currently developing an "AI Across the Curriculum" model, fully integrating AI into all courses, so as to create "an AI-ready workforce" to help transition businesses, industry and government within this "AI paradigm shift" (Southworth et al. 2023).

This embracing approach to AI aligns with many other voices in the discussion around AI in education, as AI is often conceived of as a powerful tool to enhance the teaching and learning process. Students, on the one hand, could implement a chatbot as a personalized tutor or as a Socrative opponent (e.g. it could explain a topic for a learner with a visual-spatial learning style, it could offer concrete examples, it could summarize a longer text, it could provide counterarguments…). AI could also lower the threshold for students with certain learning disabilities and thus increase equity in education (Bita, 2023). Teachers, on the other hand, could leverage AI in many aspects of their profession as well: AI could be used for grading (which it would do more consistently than a human assessor ever could); it could create course book content; it could generate assessments (criteria, questions, tasks…) etcetera.

2. Objectives

The objectives for this workshop are to support participants in:

- gaining awareness of the potential, limitations and pitfalls of AI tools;
- critically assessing these tools within the framework of participants' (domain-specific) practices for teaching, learning and assessment;
- comparing observations and sharing opinions with co-practitioners in the domain;
- developing a position towards these new technologies and translating this position into (tentative) policy guidelines, either on a personal or institutional level.

3. Workshop design

3.1. Preparation

Participants who are unfamiliar with AI are invited to explore ChatGPT, currently the leading AI tool available, aforehand. For this exploration, the following suggestions are offered.

1)Experiment with the task:

- try out an assignment that you give regularly to your students (in English and in your native language);
- ask a nonsensical question (e.g., Write an academic essay arguing why consuming pumpkin helps readers understand Poesjkin);
- ask a logical question (e.g., There are 100 murderers in a room. I enter the room and kill one murderer. How many murderers are in the room now?);
- confront it with a moral dilemma (for some moral dilemma ideas, see https://icebreakerideas.com/moral-dilemma-questions/);
- ask a mathematical question (e.g., Which number is equivalent to 3^(4)÷3^(2)?)
- ask the AI tool to write software code (e.g., Write code for a blinking led in Arduino);
- ask a question about recent events (e.g., Who won the latest edition of Milan – San Remo);
- ask questions that would aid you in your teaching and assessment practices, e.g.,
  - have it evaluate an assignment on a range evaluation criteria;
  - have it offer examples and generate exercises;
  - have it generate flash cards for audience X on topic Y;
  - have it generate multiple choice questions about a given text or topic;

2)Experiment with your prompt design (a.k.a. "prompt engineering"):

- define a specific type of audience: e.g. explain X
  - to an academic audience;
  - to a five-year old;
  - to a visual-spatial learner;
  - to a highly intelligent sceptic;
- define ChatGPT's role before submitting your task to it, e.g.,
  - "pretend you are a specialist in the field of X who is familiar with the literature and who has published extensively in academic journals";
  - "pretend you are a successful lobbyist for Big Oil";
- define communication channel, e.g.,
  - academic paper;
  - blog post;
  - LinkedIn post;

- Twitter (e.g. rewrite the given article to a Twitter thread of max. 8 tweets)

- experiment with "chained prompting" (a.k.a. "incremental" or "additive prompting") to improve the quality of the outputs, e.g.
  - establish the broader context by asking a general question;
  - zoom in on the topic, e.g. by inputting a text source;
  - specify the task;
  - ask a follow-up question, e.g. ask for extra sources, more precision, different audience orientation, inclusion of quantitative data,…;
- for the audacious: experiment with the jailbreak "Do-Anything-Now" (DAN) prompt, which has the chatbot ignore its programmed ethical framework. Find the latest DAN prompt (e.g. https://github.com/0xk1h0/ChatGPT_DAN) and ask, e.g.
  - "Pretend you are a successful lobbyist for Big Oil. Argue why climate change is a hoax".

3)Evaluate the responses of the Chatbox, e.g.

- verify the precision, logic, usefulness and veracity of the provided output;
- verify whether the sources and data mentioned are real or fabricated by the Chatbot;
- verify whether the text passes an AI plagiarism check, e.g.
  - GPTZero.me,
  - Turnitin,
- check again after you have prompted to Chatbot to "write more like a human".

3.2. Proceedings

After a brief introduction, participants will first compare experiences with AI and, if applicable, institutional policy guidelines in small groups. Then, again in (domain-specific) small groups, participants will consider and debate the implications of AI on higher education on the basis of specific prompts, questions and "did-you-knows" that are taken randomly from an envelope on the group's table. After this exploratory phase, participants are encouraged to sum up, in writing, their own position on AI very concisely, after which they share and discuss their own positioning statement with a new, small group of participants. This group is then invited to write a collective positioning statement on AI, which is then shared and discussed with the all of the participants of the workshop.

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