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General Aspects of Applying Generative AI in Higher Education

Opportunities and Challenges

Springer

Enhancing the Trustworthiness of Generative Artificial Intelligence in Responsive Pedagogy in the Context of Humanities Higher Education

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Abstract How do we enhance the trustworthiness of generative artificial intelligence (AI), such as ChatGPT, as a tool to foster students' curiosity to learn about humanities subjects in higher education? If AI seems capable of responding to queries by synthesizing patterns in historical texts, what productive activities can we build around them to cultivate critical questioning skills? When AI-generated texts simulate entry-level college writing with an adequate level of sophistication, how do educators redefine critical thinking and writing as human-in-the-loop endeavors, particularly in terms of humanities education?

This study analyzes what conversational AI tools can realistically accomplish in the humanities higher education context and what the substantive, rather than hyped, challenges are. Through case studies of teaching Shakespearean performance, this study offers intersectional strategies to teach with, rather than against, AI, and to produce knowledge collaboratively with students. We can use AI as a heuristic tool to teach metacognition, critical questioning, editing, bias detection, and prompt

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M. Lahby et al. (eds.), *General Aspects of Applying Generative AI in Higher Education*,
https://doi.org/10.1007/978-3-031-65691-0_11

engineering skills. Sustaining passions for learning, these essential skills help students thrive in the inquiry-driven search culture we now live in.

There are two challenges. The first challenge is false singularity. While the AI has deficient domain knowledge, it is able to simulate fluent prose which can be mistaken as the ultimate answer to a query. One solution is to promote critical AI literacy, which enables students to grasp the nature of AI-powered simulation, and to nurture metacognition, a self-reflexive understanding of one's own learning and thought processes.

The second challenge is the tendency to mistake AI synthesis for critical thinking, the solution to which is the flipped classroom. Instead of writing essays that respond to instructor-generate prompts, students construct open-ended but focused research questions that are refined through reiterative and interactive activities.

With high-quality prompts, the outputs by generative AI can simulate human speech and creativity in some contexts. As a probabilistic text generator, tools such as ChatGPT engage in a performative act of generating texts through paraphrases. Since the AI is coded to produce syntheses of anonymized public voices in its datasets, it is a ghost and synthetic version of the publics. AI throttles and controls the general public's access to information.

The fact that ChatGPT is a randomized representation of anonymized public voices makes it useful artistically, too. A number of artists and writers, including Mark Amerika and David Jhave Johnston, have already used ChatGPT as an aesthetic instrument.

Keywords Generative AI · Humanities higher education · Arts · Critical questioning skills · Shakespeare

1 Introduction

Artificial Intelligence (AI) is an umbrella term covering a set of technologies with self-governing protocols. Examples range from predictive texts in autocomplete typing tools, algorithmic ranking mechanisms commonly found in search engines, and semi-automated route calculation in Google Map. There has been over a century of development of various forms of AI, ranging from a robotic mouse capable of navigating a labyrinth in 1950 to a purpose-built IBM supercomputer that could play chess in 1985. Since late 2022, one of the most prevalent types of AI has been generative AI, which refers to algorithmic machine-learning models that are programmed to generate texts or images that resemble the patterns in the datasets they trained on.

The research laboratory OpenAI transitioned from non-profit to a for-profit company in 2019 and released, in December 2022, a free preview of ChatGPT, which can converse with users by simulating human speech. This chatbot is based on their GPT-3.5, a generative pre-trained transformer-based large language model (LLM). Since it performs conversational tasks through a user-friendly interface with a very

low barrier for entry, ChatGPT has gained wide-spread media coverage and a large user base. Multiple applications have been built around it, including Google's Bard (now Gemini) and Microsoft's Sydney (Copilot) within the Bing search engine. In the early months of GPT's public release, there was wide-spread perception of its threat to education within the humanities sector of higher education.

ChatGPT's performative and simulation acts are polished enough to have triggered bifurcated responses from multiple communities. The hype is driven less by the merits of the technology and more by investors and incentives rooted in market realities, such as stock prices and OpenAI's subscription plan for premium use (ChatGPT Plus). The hype characterizes generative AI as either a devil or an angel. Writers and educators took turns to pronounce the death of college essays in sensationalist tones [1] and to declare allegiance to the new AI tool as the latest savior of higher education [2]. The *Science* family of journals deem that "text generated by ChatGPT or any other AI tools cannot be used in the work" submitted [3]. The National Endowment for the Humanities' Office of Digital Humanities has a policy that prohibits the use of AI in evaluating grant applications. Meanwhile, a controlled study at MIT suggests that ChatGPT helped increase productivity in "mid-level professional writing tasks" such as marketing [4, p. 11]. Within the arts and humanities, conversations about ChatGPT tend to focus on detecting new forms of plagiarism, as evidenced by a podcast episode of the Folger Library's high-profile Shakespeare Unlimited series [5] among other publications.

While this AI technology excels in pattern recognition and reproduction, it has several shortcomings in the context of expository writing in the realm of humanistic research. It has a tendency to produce and confidently reassert factual errors [6]. It lacks any aggregated domain knowledge and is often incompetent in context-specific operations [7]. Its outputs, from humanistic perspectives, can be formulaic, generic and repetitive. It is incapable of natural language processing in the context of critical thinking [8, p. 11]. It is incapable of symbolic and inductive reasoning [8, p. 2] as well as moral reasoning.

At its core, such generative AI is "a lumbering statistical engine for pattern matching" and for "extrapolating the most likely conversational response" to a question without positing "any causal mechanisms" beyond "description and prediction" [9]. Further, these probabilistic models operate as black box devices—systems that produce information without revealing its internal workings. They generally lack model interpretability in that human coders are unable to fully explain or predict the AI's output.

Generative AI tools complicate the algorithm- and inquiry-driven culture we live in. Algorithm-governed inquiries and responses frame our contemporary life from navigation to scholarly research. One of the most notable features of this type of technology is the natural language interface. This has led to hyperbolic reactions that anthropomorphize [10] the technology using such words as the AI is "hallucinating," "learning," or "declaring love" in reference to ChatGPT [11] and the AI-powered Microsoft Bing [12] while neglecting the fact that queries and prompts are themselves new data points to be analyzed. It is more scientifically prudent and meaningful to treat generative AI as what it is: a machine designed to accomplish

limited and specific discursive and simulative tasks. A more accurate and nuanced description of ChatGPT is that it is an "aesthetic instrument" rather than an instrument of reason or an "epistemological" tool [13]. It is a simulacrum [14] machine, a mechanism of synthesizing and simulating social discourses.

The following pages will proceed from a methodology section to case studies and interpretations. The research methods section outlines the relevance of performance and media studies methods that I employ, as well as interface theory which informs my AI pedagogy. This is followed by a section that analyzes AI's textual outputs from a humanistic perspective. This section argues that generative AI's outputs can be analyzed as theatrical performances. The next section discusses the cultural significance of queries and prompts in the inquiry-drive culture we live in, and how students can develop meta-cognition skills to understand their thought processes and why they ask certain questions in a certain way. Following this set-up, we proceed to two major challenges of teaching with AI, namely the problem of singularity and the tendency to mistake synthesis for critical thinking. Solutions are proposed for each challenge and tested in the classroom. To provide a fuller view of AI in the arts and humanities, the next section surveys other artistic uses of AI beyond the higher education classroom. This provides useful contrasting points. The last section examines the limitations of this study and future research directions.

2 Research Methods

What is missing from the current debate are insights from performance and media studies methods which can help us more accurately understand how generative AI, as a synthesis of publicly available texts, is changing the publics' relationship to themselves. The latest iteration of generative AI is programmed to recognize and reproduce patterns in textual input and output. Its output is not original even if it may appear to be new in some way. This type of AI performs discursive tasks through simulation. AI is designed to accomplish only specific pattern-centric tasks. It is neither an angel nor a devil, neither a "toy" [13] nor a generalist tool.

Instead of "thinking" or "conversing," such AI applications are statistical models built to regurgitate the most statistically-likely combination of words—based on the corpora it trained on—and to emulate human speech syntactically without understanding natural language semantically. Within media studies, the theory of remediation holds that a defining characteristic of new digital media is remediation, the representation of one medium in another. New media remix and compete with older media. The generative AI represents data of one medium (datasets that are not humanly possible to digest) in another medium (succinct, human-like conversations). It therefore "remediates" human narratives [15, p. 45] as well as perform various versions of collective consciousness of the publics.

In many ways, the arrival of generative AI, with its celebrations and damnations, is an old story. Technological transformations have brought cyclical adulation with worry since at least the printing press. In *The Gutenberg Parenthesis*: *The Gutenberg*

Parenthesis [16], Jeff Jarvis characterizes the age of print, an era of Gutenberg, as a worldview about permanence and authority of the printed word. Jarvis noted that the emergence of the printing press was as disruptive as digital transformations today. Further, in *The Science of Reading* [17], Adrian Johns reveals that reading is both a social affordance and an enterprise enabled by technologies of representation—the written or printed words.

A second method I employ in this study is interface theory. In 1962, Marshall McLuhan used the word interface to refer to meeting points between different entities and social structures [18, p. 149]. In *The Interface Effect*, Alexander Galloway moved beyond the idea of a contact point to interconnected mechanisms of communication between what he calls "nested systems [19, p. 31]. A codex book or digital screen is as much a nested container as the Internet, because all of these window-like entities contain textual and audio-visual contents. AI on screen is part of this ecology of interfaces, and the publics regularly interact with social narratives through these interfaces. Interfaces are transmittal vehicles, but they are not value neutral. Interfaces carry external value as much as they convey information [20, p. 83].

As a form of social robotics designed to interact with humans, AI percolates and influences social narratives that the public consumes. As an interface between humans and large datasets, AI "remediate" [15, p. 45] explicit and implicit narratives by representing one medium within another. AI becomes a mediator that consolidates and presents data in discursive formats as conversations.

These textual, generative AI tools, as a pattern-recognition machine, lacks originality. It anonymizes and regurgitates publicly available voices within its datasets. This feature, however, is useful pedagogically in teaching students to analyze the elusive and often-hard-to-qualify "publics" in performance culture.

3 AI Outputs as Theatrical Performance

How might generative artificial intelligence reframe students' relationships to early modern history? I see AI-generated texts as a form of improvised performance. With my students, we have studied text generative mechanisms as part of a longer history of reading and writing. The long history of adaptations of Shakespeare, both early modern and modern, is fertile ground to examine more nuanced meanings than those that immediately meet the eye.

Shakespeare's plays as stage drama provided us with key inspiration. At its core, theatre is an interlinked system of interfaces that regulate inputs and outputs. Actors work with promptbooks for their cues. Characters react to speeches by other characters. Even when scripted, performances of the same production differ in dynamics each night.

Similarly, current generative AI technologies draw on users' prompts and the publics' collective memories to create improvised performances. The same prompt generates cognate but different outputs. Each instance of rendition is unique. The AI

outputs are replete with repetitions with a difference, which makes them useful pedagogically to teach literary iterability, the phenomenon that texts contain traces of other texts that co-constitute their meanings [21].

Like King Lear, whose question, "Who is it that can tell me who I am?" prompts the Fool's witty answer, "Lear's shadow" in the Folio text, we can develop reflexive self-knowledge when interacting with AI. In fact, if ChatGPT were to use first person pronouns at all, it should use "we" because it is representing anonymized public voices from the data sets it trained on. Humans who interact with generative AI engage in a conversation with their own shadows.

The performative nature of generative AI is often deemed a characteristic of its untrustworthiness and unreliability. However, it can be harnessed to enhance trustworthy education with human-in-the-loop designs. While current consensus holds that generative AI is untrustworthy in new knowledge creation, it can be guided to play the role of a social simulator and provocateur in educational contexts. As a pattern recognition and synthesis mechanism, generative AI could be deployed as a social surveillance tool to gauge a society's attitudes toward select topics. For example, a team led by Daniel Pillis at MIT has built an application called LGBTQIA+ Advocacy Simulator. 307 participants use AI-driven virtual characters to simulate social interactions surrounding the scenario of gender and sexual minorities' "coming out of the closet" [22]. Their experiment shows that the simulated conversations foster better understanding of and empathy toward LGBTQ communities. Participants practice LGBTQIA+ advocacy through social simulation. This is an example of human-centered computing.

In the fields of economics and psychology, scholars use AI to enhance experiment design and implementation by crafting instructions for surveys and ensuring statistical robustness [23, 24]. Specifically, AI simulates the surveyor's role to replace the human presence in order to circumvent what is known as the "demand effect," namely "experimenter-induced cues and expectations in the context of research experiments which may influence the behavior of participants" [25]. Participants in experiments tend to "interpret the experimenter's intentions and change their behavior accordingly," which decreases the efficacy and accuracy of surveys [26]. AI can improve this common situation. If participants in surveys need clarification of the instructions, AI-powered chat assistants step in to help. AI's scalability allows for it to simultaneously monitor multiple participants and automate the data collection process. This reduces the risk of experimenter bias where participants give expected, rather than, authentic answers.

In generalist contexts, AI is not a trustworthy agent of knowledge creation [11]. However, coupled with specialist prompts and instructions, AI could simulate social situations to aid in students' learning. I have taken advantage of AI's performative nature (performing dialogues to prompts much like how theatre actors stage a play based on promptbooks). One of the assignments, for instance, involved students interviewing various stakeholders on specific topics. I asked my students to rehearse their interviews with my bespoke LLM AI Teaching Assistant which is part of my open education resource (OER) interactive web-based textbook at https://critical-theory.info/. They finetuned their questions based on the role-playing AI's responses.

They also polish their interview skills through the simulation exercises. My AI Teaching Assistant is trained on transcripts of my lectures and my OER, and it draws its answers from data within a pre-set boundary. When they are ready, with more developed interview competence and effectively designed interview questions, they proceeded to interview human subjects in the real world which yielded more satisfactory results.

4 Cultural Significance of Queries

Further, based on this understanding of generative AI, I teach students to take a metacritical stance to research questions they ask. Our collective histories of interacting with AI form a repository of links among particular types of questions about particular types of early modern history. The types of output we generate reflect the types of prompts and queries we put in. What we see correlates to how we see things.

In the context of early modern studies, users' prompts reflect particular kind of historical imagination and relationships with history. Here is one of my students' questions early on in the semester regarding the tradition of all-male performance: "why did Shakespeare's contemporary audiences take boy actors for girls?" The ways in which this question frames early modern theatre practices reflect our contemporary cisgender-centric assumptions about gender roles and gender presentation on stage.

For reasons of equity and accessibility, I had all students use my open-access AI Teaching Assistant at https://screenshakespeare.org/. I provided specific instructions to my tailored AI model to simulate a college professor of humanities. My students would input their draft research question to obtain both possible answers to the types of questions they drafted and alternative, more sophisticated ways to ask those questions. After ten iterations, my students progressed from the aforementioned close-ended question to a more open-ended and potentially more inclusive question: "How did the early moderns practice gender on stage? How did stage representations of gender resonate or subvert gender practices in people's daily life historically?" This exercise avoids the pitfall of over-reliance on AI as a knowledge agent.

I find myself teaching both historical knowledge and meta-cognition, namely the awareness of one's own thought and reasoning processes. As we reflect individually and collectively about our own critical thinking and our interaction with AI, we build a repository of shared experiences through the storage and circulation of evolving datasets that are our inputs and outputs. In other words, I use AI as a heuristic tool to teach two things: metacognition and critical questioning skills. Sustaining passions for learning, these essential skills help students thrive in the inquiry-driven search culture we now live in.

To enhance the trustworthiness of AI, I have co-designed with my interns two purpose-built LLM AI Teaching Assistant models. These multilingual models use the Retrieval-Augmented Generation (RAG) method and have been deployed on my

OER textbooks at https://screenshakespeare.org/ and https://criticaltheory.info/. We pursue trustworthiness as defined by the National Institute of Standards and Technology in terms of a model's explainability, interpretability, accountability, and transparency. My AI Teaching Assistants draw answers from within the data of my OER textbooks as a pre-set boundary. The AI's operation is interpretable through iterations of custom prompts in the background and custom data sets. My AI system does not store user data. The messages shared between the AI tutor and the user are deleted as soon as the user closes the chatbot screen. There are two main challenges in this new landscape. I propose a tentative solution to each of them.

5 Challenge # 1: Singularity

First, the singularity. The AI's conversational interface generates texts that simulate fluent, human speeches. While search queries on Google lead to a hierarchical, but open-ended, list of links and sources, similar queries prompt the generative AI to produce full passages that give the impression of a lecture or essay, sometimes with first-person pronouns, which can be mistaken as the only and ultimate answer to the question. The self-contained output gives the false impression of singularity and neutrality. A solution to this challenge is to promote metacognition and critical AI literacy.

Here is one way to teach critical AI literacy. When given a prompt, such as "what were the prevalent views of gender in early modern England and why?" the AI proceeds to finish the prompt based on its mathematical program's calculation of the statistical distribution of words in the corpora of human-generated texts that it has trained on. It treats a prompt as a fragment of text, and it has been coded to elaborate on that "fragment" as a form of auto fill and auto complete. Further, it relies on documents it ingests during training. Currently, most documents are from the modern and contemporary periods. This creates a temporal bias.

The large language model is an autoregressive model, namely a statistical mode that predicts future values (words) based on past values (words). It is therefore able to simulate discourses about our contemporary assumptions about gender practices in early modern times. One strategy to teach multiplicity is to use such tools as Adobe Firefly to teach visual storytelling through the writing of alt-texts. Students are asked, for instance, to visualize the iconic balcony scene where the lovers confess their feelings for each other in *Romeo and Juliet.* In describing in detail how they would stage such a scene, their descriptions become alt-texts of performances. These alt-texts are entered as prompts into Adobe Firefly to generate still images. When students neglect to specify the characters' racial identities, the AI defaulted to whiteness. In analyzing such images, students become aware of biased assumptions made by AI and fine tune their skills of visual storytelling.

Understanding the nature of this AI-powered simulation will enhance our metacognition of the knowledge industry. For instance, how and why does the AI recycle

our contemporary, cisgender-sexist vocabulary of cross-dressing when discussing early modern cross-gender practices on stage?

In some contexts, students may be hindered from learning new critical methods because they tend to map new data onto their pre-existing mental maps, rather than changing their mindset to account for new information. Metacognition as a method reduces the cognitive bias to preserve the status-quo.

6 Challenge # 2: Mistaking Synthesis for Critical Thinking

A second challenge is mistaking synthesis for critical thinking. Current AI platforms excel in the task of recognizing patterns and synthesizing large quantities of texts. However, the quality of AI output correlates highly with the quality of the human-initiated query with contextual details. Moving forward in this inquiry-driven search culture, higher-level critical questioning skills are more valuable than basic skills to retrieve facts and summarize information which is being outsourced to machines.

The solution to combatting the tendency to mistake synthesis for critical thinking, therefore, is to teach with AI as a heuristic tool through open pedagogies. We can use AI platforms to hone our critical questioning skills, which go beyond so-called prompt engineering.

In my classes, instead of writing traditional college essays that respond to instructor-generated prompts, students construct open-ended but focused research questions based on course materials. These questions are collaboratively generated and refined through interactive activities both in class and through online discussion board activities that replicate some dynamics of social media and knowledge bases such as Quora and Reddit.

Using bespoke instructions, I customized my open-access AI Teaching Assistant to both ask students questions for reviewing purposes and to provide alternative versions to the questions students draft. The interactive nature of these exercises encourages student buy-ins and removes the motivation for cheating or taking short cuts. By initiating the questions themselves and seeking answers using a wide range of tools, including academic libraries, scholarly databases, digitized collections of primary texts such as EEBO (Early English Books Online), search engines, Google Scholar, Google Books, and conversational AI for brainstorming purposes, students are transformed from passive receivers to active creators of new knowledge. Using AI in this context emphasizes AI as part of an ecology of information rather than as the sole solution.

Students can also fine tune their research questions in the form of interconnected queries for both AI platforms and scholarly databases. These questions are not only designed to extract information (in the sense of data collection) but also to create new pathways through course materials. Research questions themselves are valuable new data points, and they foster social networks of researchers.

Another activity involves both using the AI as a humanities lab and reverse engineering the process of critical writing. In place of traditional peer review of drafts, students critique AI-generated essays. The conversational AI is a simulator that can produce texts of high enough quality to be useful in college-level peer reviews. Students are no longer held back by their typical trepidation of offending a classmate by being honest during peer review. Through critiquing and dissecting the AI-generated texts, students hone their critical writing skills and skills to detect unexamined assumptions and biases. In this way, the conversational AI serves as a lab where new ideas can be tested out. As students develop their editorial and curatorial acumen, they become more effective writers.

Last, but not least, AI can be used as both a metacritical and a prosthetic device. Students whose first language is not English will benefit from the AI as a heuristic aid to become more articulate and be able to participate more fully in learning. International students will not be a liability but rather an asset in the class, since they can now express more fully their valuable non-American perspectives which enrich the discussion. This is a valuable feature of the AI for our collective pursuit of social justice.

7 Other Uses of AI in the Creative Industry

Beyond the arts and humanities classroom, several artists and poets have developed collaborative relationships with AI. Large language models can create, with some level of randomness, textual and visual objects that resonate with artifacts in the datasets they trained on. This randomness can inspire human creativity by suggesting less frequently trodden paths or uncommon association among objects and words. I offer these adjacent cases for the purpose of contrasting different figuration of AI as a trustworthy agent of co-creation.

For example, composer Douglas Boyce and his team created a film called *Tyrian Purple* with some AI outputs. Visual artist Maryam Faridani drew on Melissa Raneg's poems as prompts for AI to create video footage that accompany Boyce's music. Human and non-human agents co-create art by leaning on one another.

Invested in artistic creativity as a dialectical process "across the human-nonhuman spectrum," artist Mark Amerika uses a predecessor of the current ChatGPT as a co-writing buddy to add layers of "creative incoherence" to his works [27]. He remixes fragments of AI-generated texts with his own words in order to "defamiliarize language for aesthetic effect" and to increase his work's "glitch potential," a process which he compares to the common jazz practice of "intuitively missing a note to switch up the way an ensuing set of phrases get rendered" [27] (5). One might say Amerika is performing opposite the generative AI in an improvised artistic act.

Similarly, avant-garde writer David Jhave Johnston creates outputs from an AI language model through a series of prompts. He believes in a continuum between traditional conceptions of the human author as "a conduit … through which the

wind speaks" and AI as "an oracular vessel" that is similar to "the perforated fiber-optic networks." By collaborating with generative AI, Johnston wishes to make words "live again" as if reborn from a "modularized … system of language interchange" [28] (5). Seeing an "architectural parallel" between human poets and generative technologies, Johnston theorizes that "language generated by code becomes autonomous intent. Autonomy of language (coded and embodied) resonates with the deepest roots of writing" [28] (5). Both writer and artist take advantage of generative AI's performative representations of public voices in their remix of those voices in their arts.

AI has also been used by Annie Dorsen to create "algorithmic theater" (Starker) [29]. She is known for her *Prometheus Firebringer* at Bryn Mawr College in 2023 [30]. She used commercially available AI tools, namely GPT 3.5 and Dall-E, to generate new voices and theatre masks. In fact, Dorsen has been experimenting with various versions of generative algorithms since 2010 when she remixed "the language of a 1971 debate between Michel Foucault and Noam Chomsky" to produce a piece called *Hello Hi There*. In that production, two bots had a dialogue, and the bots drew on the language of philosopher Foucault and linguist Chomsky.

An interesting piece of human-in-the-loop AI theatre is Dorsen's *A Piece of Work* in 2013 [31]. The production featured a human actor with an AI-driven, disembodied, synthesized voice. AI recited randomly re-sequenced lines from Shakespeare's *Hamlet* and played against the human actor. The show's title was inspired by Hamlet's phrase "what a piece of work is a man." *A Piece of Work* also suggested that AI-generated texts may have surprising or impressive characteristics [32].

The actor emerged out of the audience in the auditorium to go onstage to perform against the AI [33]. The auditorium is presented as a space for humans, while the backstage was a space for machines just like the stage machinery backstage in most theatrical productions. Here, the backstage was a space dominated by AI algorithms. We can view the production as an example of social collaboration or a balancing act between the actor and AI. When the actor misquoted Shakespeare ("to be and not to be, this is the sorrow"), the AI voice stepped in to correct him. The actor carried on defiantly, introducing more errors ("to be and not to be, those is [*sic*] the heartache") until the AI gave up. Dorsen used this technique to explore "the relationship between technology and power" [30].

These cases show that generative AI could be used productively within certain parameters to enhance the arts as well as humanities higher education.

8 Limitations of this Study

While the tendency to anthropomorphize this technology of representation is problematic, there is a silver lining. ChatGPT can be seen as a ghost of the publics or a synthetic version of the publics. Coded to produce syntheses of anonymized public voices, akin to a blurry picture of the linguistic contours of the World Wide Web [34], ChatGPT classifies words in large corpora of text data and, based on its

classification of words with weighted statistical values, engages in a performative act of generating human-like text through paraphrases.

In the process, generative AI inherits and propagates existing social implicit biases [6] as well as commonly held beliefs, especially when the prompts are not carefully phrased. Therefore, when the general public interact with ChatGPT, they converse with their own shadows and echoes. AI becomes a mirror held up to humanity, though only users with metacognition skills will be able to detect this tendency.

One would be reminded of versions of themselves when utilizing ChatGPT to generate texts but forgetting the performative nature of the machine's output. ChatGPT is the publics' shadow. The *King Lear* metaphor of conversing with one's own shadow is very apt, given that one has to be registered even to use the free version, and given that OpenAI "automatically collect[s] information about [customers'] use of the Services" according to their policy [35]. Not only are voices of the public—in digital or digitized forms—incorporated into the generative AI's performance of the publics, but now individuals' private interactions with the tool are also funneled into expanding the raw material the AI will draw on for future performances.

The efficacy of the use cases outlined above regarding generative AI in humanities higher education and in the creative industry are reliant upon users' critical literacy and a context that allows for inaccuracy and errors. The use of AI for critical questioning skills does not rely upon the AI model's domain knowledge. It merely uses it as a brainstorming sounding board in a context that does not call upon the interlocutor's domain knowledge.

9 Conclusion

Current technological limitations mean that significant human curatorial and editorial labor is required, in the training of LLM, in the form of prompt engineering or in "post production," to ensure high quality outputs by this type of AI. Students and journalists often overlook these limitations. Generative AI, if used responsibly and contextually, can enhance humanities higher education and artistic creativity. This study demonstrates cognate use cases where AI models are used to trial typical patterns of answers to particularly types of questions, rather than to use AI to derive new knowledge or retrieve factual information. Integration of AI as a tool in the human-in-the-loop collaboration also promotes a deeper understanding of art as a form of social collaboration [36, p. 1].

The "interdependent and collective nature of collaboration" [37, p. 62] encourages participants' agency, sense of responsibility for their roles, and shared accountability. By creating knowledge collaboratively, students and educators lay claim to the ethics and ownership of that knowledge, an act that is particularly urgent and meaningful after COVID-19 when students, more than ever, longed to be connected to others. Collaborative learning involves the creation and circulation of freeform

responses that foster a better understanding of dramatic texts. In this form of non-linear thinking, the texts become parts of a non-hierarchical network of ideas rather than a singular point of origin for dramaturgical meanings. This chapter demonstrates how collaborative learning helps students and researchers untangle the web of 'mingled yarn' of Shakespearean performances in digital culture.

These philosophical principles and pedagogical strategies originated from my practices in the classroom as well as my partnership with a number of collaborative digital humanities projects. One unique feature of my approach to teaching is the exploration of textual and performative variants in the plays and their performances through digital tools. While this chapter discusses pedagogies for the four-year university classroom, many of the collaborative learning strategies are applicable to other levels of education. While there is an emphasis in American education to train problem solvers, critical questioning skills are the first step to identifying worthy problems to tackle.

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ISBN 978-3-031-65690-3 ISBN 978-3-031-65691-0 (eBook)
https://doi.org/10.1007/978-3-031-65691-0

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

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