Prompt: "A mixed-initiative co-creative interface between an AI and a human creator. The image should demonstrate that the human has a more robust sense of agency in the relationship."[1]

Teaching Creatives to be AI Provocateurs

Establishing a Digital Humanist Approach for Generative AI in the Classroom

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Discovering the Necessity for Digital Humanism

In 2022, before the winter holidays, OpenAI released its Generative AI (GenAI) tool, ChatGPT. As an Assistant Professor of Emerging Media in a School of Journalism and Strategic Communication, I scrambled for a philosophy, pedagogical or otherwise, that I could rely on as I explored integrating the tool into my courses. My initial approach was Posthumanist, presenting GenAI as a synthetic collaborator for students: an equal partner in their creative efforts.

My background in Human-Computer Interaction and knowledge of Beyond-Human Computer Interaction encouraged my belief in the ideals of Posthumanism and creativity (Harris & Holman Jones, 2022). As an educator, I believed that if I encouraged a sympoiesis (Haraway, 2016) making with the AI, I could expand their creative agency, relationships, ecologies, curiosity, and humility (Harris & Holman Jones, 2022). The strategy was a

[1] This image was generated through Dall-E 3 on November 11, 2023, with the prompt, "a mixed-initiative co-creative interface between an AI and a human creator. The image should demonstrate that the human has a more robust sense of agency in the relationship." It was chosen from eight alternatives.

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spontaneous pedagogical exploration, with both me and the students learning about the tool's potential and the Posthumanist approach simultaneously. In several ways, this exploration fell short. Instead of elevating the students' creative agency and curiosity, the Posthumanist approach I implemented diminished their human agency by equating it with mechanical and computational processes.

In the wake of this realization, I looked to Humanism and found Digital Humanism. Digital Humanism seeks to elevate human skills, values, agency, and capacities above the digital outputs, processes, and algorithmic systems that dominate digital class society.

Before discussing the course, I will expand upon Posthumanism and Digital Humanism in this case study. Then, I will present the work and assignments taught through the Posthumanist lens. To conclude, I will return to the Digital Humanist approach and suggest ways for teaching students to establish a provocateur relationship with their GenAI tools.

On Posthumanism

Posthumanism de-emphasizes human-centric understanding and interaction with the world, supporting the idea that technologies like GenAI can help us transcend our biological and cognitive limitations (Hofkirchner, 2021; Nowotny, 2022). It accepts non-human entities as having agency and promotes the concept of distributed agency—where humans and non-human entities collectively create actions with both intended and unintended effects (Schiaffonati, 2022). Such an awareness is ultimately beneficial. Posthumanism draws our attention to the exploitative violence perpetuated on nonhuman ecologies. This focus reminds us of humanity's situated position within a system, a network, and draws our attention to the devastation of the Anthropocene (Haraway, 2016). Technological Posthumanists respond to this focus by situating algorithmic and computational systems as the missing link that will right these wrongs.

One such narrative is that AI can and will improve the human condition by resolving inherent weaknesses not resolved by natural selection and evolution (Dobrodum and Kyvliuk, 2021). AI is then used to produce artificial organs, enhance cognitive capacities, and direct behavior to achieve desired ends. Technology, inclusive of AI, enables humans to operate better within the world and beyond. Indeed, posthumanist thinking and framing are often invoked in design fiction discussing how humans, as organisms, would need to be altered for space travel (Ferrando, 2019). In short, viewing the human as an incomplete or unfinished entity that can only be fully realized through technologies like AI is a cynical reading of humans and their tools. Such positions are currently bound by problematic framings of human values (Jääskeläinen et al., 2022). The narrative ignores the negative consequences of these technologies' integrations into the human experience while diminishing the positive aspects of humanity.

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Another challenge with these tech-deterministic imaginaries is that they realize a future where humans and computers share in the production and effects of actions, processes, and produced artifacts. In short, when a human and a GenAI create together, the final output is shared between those two entities. The human and AI are individually accountable for what is produced. This reframes the relationship with AI from one in which the human uses a tool to one in which the human collaborates with a computational entity. In such a relationship, there is a greater risk and opportunity for creative and intellectual agency to shift away from humans as individual actors. The distribution of agency and system-wide effects also distributes accountability for what is made, resulting in ethical consequences.

As educators, we must attend to the relationship between our students and their AI tools. In a Posthumanist relationship, AI scales the power of the individual, but creative and intellectual agency can not be easily scrutinized between it and a human creator. Further, Posthumanism obscures ethical accountability for what is developed and shared with the world. In my course, the Posthumanist relationship with GenAI tools manifested in the students ceding more of their agency to the computational systems, merely copying and pasting responses instead of engaging critically with what the AI generated. In short, the Posthumanist approach in the class encouraged students to anthropomorphize their GenAI tools as brilliant peers, uncritically integrating generated content into the final work and claiming it as their own. This outcome is not aligned with my teaching philosophies.

On Digital Humanism

After some research and reflection, I concluded that a Digital Humanist perspective would have been a more appropriate approach to the course. Digital Humanism stresses “the active and transformative capacities of human beings in the digital age” (Fuchs, 2022, p. 51). Digital Humanists seek the “development of digital technologies and society that is focused on the need of humans to liberate themselves from digital class society, digital domination, and digital ideology [...] to together create a good digital society” (Fuchs, 2022, p. 51). Digital Humanists work practically to develop knowledge, resulting in a humane digital society where all benefit (Werthner et al., 2019). Creating with GenAI in the classroom "should be shaped and used in manners that do not harm society and humans, but rather support the establishment of a good, humane society" (Fuchs, 2022, p. 51).

As part of this effort, Digital Humanists support students’ creative endeavors by elevating the well-being that comes with the journey of creative and intellectual pursuits (Corazza, 2017). To achieve this, Digital Humanists seek to maintain a Sense-of-Agency (SoA) in producing their work (Cornelio et al., 2022). A SoA is a subjective reflection by an actor about whether they feel accountable for the implementations and outcomes of an action. For example, a writer may have used 800 prompts and worked across multiple GenAI platforms to produce a cover for their new book. When asked, “Did you make the cover of your book?” An artist with a robust SoA would respond in the affirmative. Such a reflection also extends to the ethics and

consequences of producing the work. In the previous example, we might ask the author if they understand that their effort displaced human creative labor.

As educators, we must inform how our students critically assess their SoA in this mixed-initiative co-creative relationship with GenAI (Liapis et al., 2016). Doing so helps them identify their positionality in the system, valorizes their human intellect and processes, demonstrates respect for other human creatives, and encourages them to stand in the power of their creative agency and autonomy.

Lastly, a Digital Humanist perspective does not frame the use of GenAI as a muse or as divine inspiration. Humanism has long rejected theistic explanations for the events of humanity and the universe (Copson, 2015). Contemporary remediations of this narrative for GenAI diminish the human labor that goes into the development of algorithmic systems, the labeling of training data, the sourcing of training data, and the exploitation of the human labor that produced the data (creative work). Such narratives also diminish the displacement of human creative labor, which falls across existing oppressive structures related to geography and race (Chia, 2022). Lastly, these narratives can be used to avoid accountability when generated work offends or needs to be corrected. A Digital Humanist approach to using GenAI in the classroom teaches students about these rhetorical moves and the artist's accountability for the work they create—including its processes, materials, and effects.

Introduction to the Course

The course was conducted in the Spring 2023 semester and comprised 14 students from different academic backgrounds. Eight students had a journalism or strategic communications background, three had a media studies background, and three had a design background. The class met weekly for approximately 3 hours, divided between lectures and project-based learning—a method proven effective for teaching interactive digital production (Dubbelman et al., 2018; Nurbekova et al., 2020).

Two main projects spanned the semester. The first was an interactive story created on the Twine hypertext authoring platform, focusing on narrative system design, character development, narrative game mechanics, environmental storytelling, and dialogue. Students also needed to learn Twine's coding conventions, read technical documentation, and develop confidence in their implementation skills. The second project involved creating an Augmented Reality (AR) story using Snapchat's Lens Studio, introducing students to AR storytelling concepts, spatial UX design, and AR interaction design. I provided resources, tutorials, and additional office hours to assist with this. The course utilized an online message board for students to share concerns, collaborate, and seek clarification.

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Teaching from a Posthumanist Perspective

The Posthumanist perspective was initially beneficial. My students displayed varied technical literacy levels. Some had basic HTML knowledge, others had experience with WordPress, and some had never written code or explored interaction design basics. Similarly, students had different media production skills—some had proficiency with the Adobe Creative Suite, while others were mainly familiar with Microsoft's Office365.

To bridge digital skills divides, I positioned GenAI as a synthetic collaborator to close gaps and enhance the quality of creative work.

As mentioned, using GenAI in this way constitutes a Posthumanist mixed initiative co-creative relationship. This relationship recognizes that both a computer and a human are making choices. Further, these choices are made autonomously by agents who equally can contribute. In other words, the computational system can execute a creative choice, or choices, with or without regard for human input. This is true for the human creative as well. In such a dynamic, the initiatives are mixed between the two agents in the creative process. The relationship "realis[es] and foster[s] human-machine co-creativity." (Liapis et al., 2016).

Students developed this kind of relationship with their GenAI tools. A student would provide a prompt and then utilize material produced by the GenAI tool. Sometimes, the student would make multiple creative choices without the system's input. Other times, the students would cede more of their agency in the co-creative process to the system. For example, students used multiple OpenAI tools to generate their characters and dialogue. Students used ChatGPT to help construct their characters, using development prompts and character attributes to add depth and complexity. This process can be seen in Figure 1.

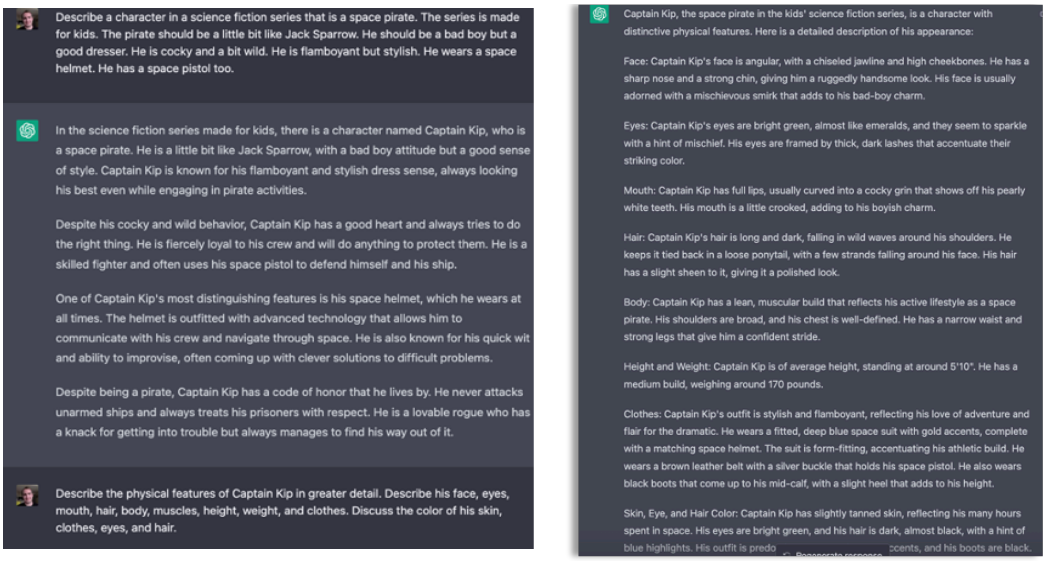

Figure 1: An example of using prompts in ChatGPT to produce physical character traits. This usage of ChatGPT represents a Posthumanist dynamic.

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The students' conversations with ChatGPT resulted in more complex and compelling characters. Further, ChatGPT enabled the students to develop appropriate dialogue tone and cadence to match their character's descriptions. In turn, the characters were more believable.

To produce visuals for their Twine stories, students took the details from their conversations about characters and fed them into OpenAI's Dall-E 2. These visuals were then used in their stories to increase the production quality of their work. This process can be seen in Figure 2.

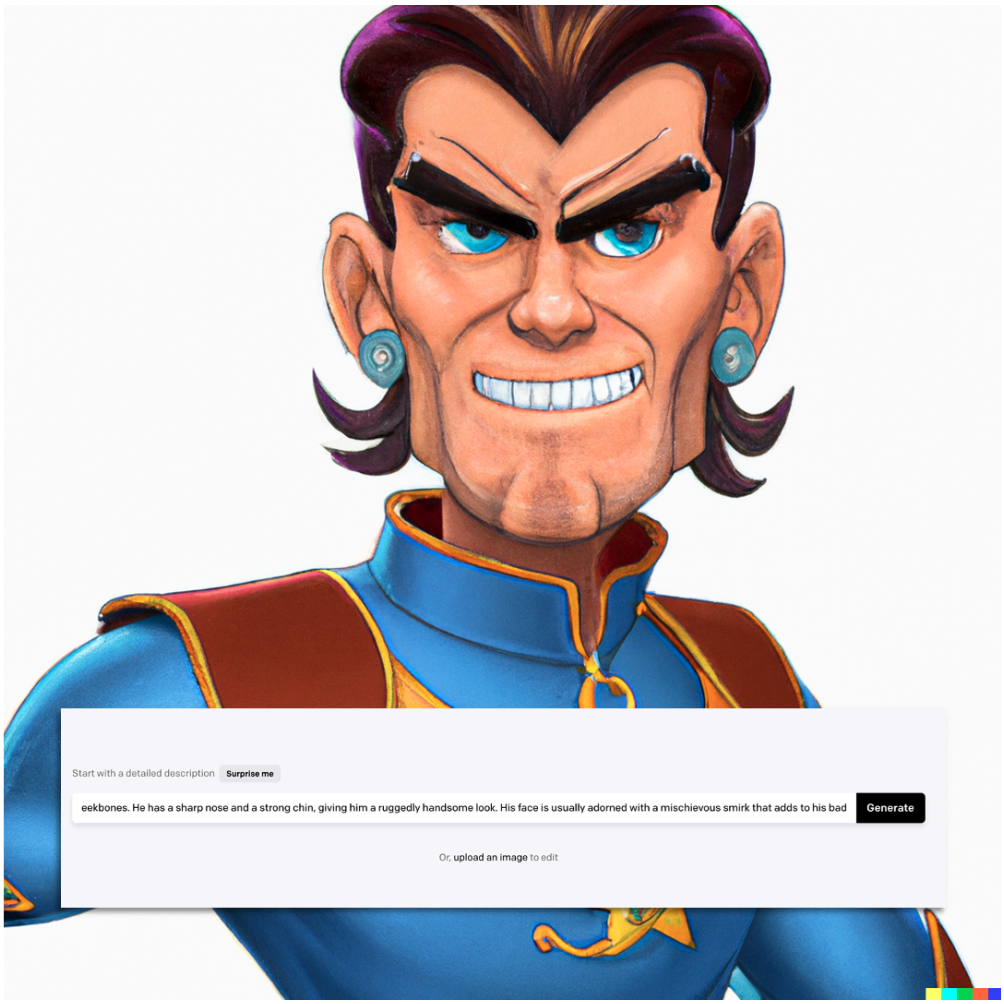

Figure 2: A student takes the physical descriptions generated by ChatGPT and feeds them into Open AI's DALL-E 2 to generate characters.

The iterative design loop constantly used GenAI tools to expand narrative worlds or align aesthetic elements with the story's themes.

For example, in Figure 3, a student achieved a cohesive visual style in her language learning narrative experience. Students thus gained experience in prompt engineering, improving

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GenAI results through optimized prompts. GenAI was a persistent and agential entity within the iterative design loop.

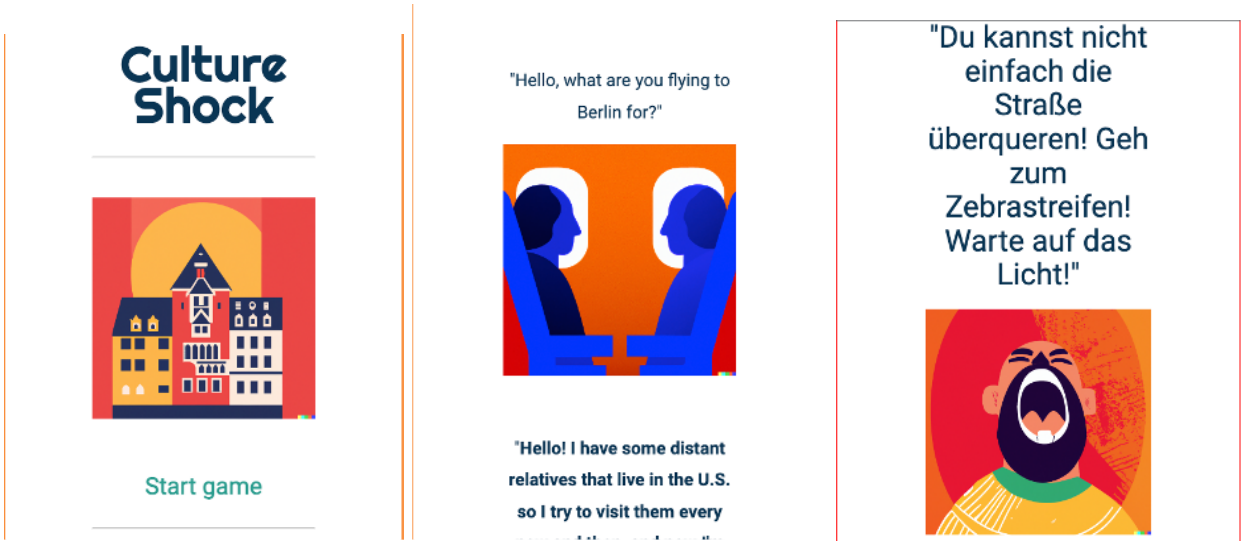

Figure 3: A student uses ChatGPT prompts with DALL-E 2 to establish a cohesive visual style in their work.

For the final project, students used Snapchat's Lens Studio. Students were new to this type of work, and I provided numerous video tutorials and technical documentation. ChatGPT assisted in simplifying technical jargon and generating examples, enabling students to implement more effective narrative game mechanics. Moreover, one of the biggest challenges with AR development is the creation of 3D models. In the past, student projects have suffered because models lacked fidelity or did not align with an experience's aesthetic. In class, students created these models using GenAI, Computer Vision, and Machine Learning tools such as LumaAI, Polycam, Metascan, and Scaniverse. As a result, student projects had a cohesive aesthetic that used models captured from real-world subjects. The models had an increased Object Presence (Stevens et al., 2002). The 3D model was perceived similarly to a physical object, which enhanced immersion in the narrative.

Exploring Digital Humanism in the Classroom

Despite the students' successful completion of their projects, our exploration ended in an uncomfortable place. I was happy that my students had produced quality work. However, I questioned the value of the relationship with the tool that I had encouraged my students to adopt. Based on their transcripts and reflections on using AI in their production loops, it was clear that several students copied and pasted directly from their tools instead of using their creative agency. This behavior was not surprising, given my lack of constraints and embrace of the Posthumanist approach.

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In the wake of this reckoning, I plan to teach from a Digital Humanist stance that preserves and enhances human creativity, especially in the digital realm. To achieve this end, I plan to prompt students to engage in exploratory queries that shed light on GenAI's behavior, its influence on them as creators, and the manipulability of the GenAI system (Thue, 2023). These queries help students discern how to adjust the outputs of a GenAI system and how they can be repurposed. Such understanding heightens students' sense of creative agency, bolstering their creative autonomy.

Emphasizing that human creativity is indispensable can foster a more thoughtful interaction with GenAI, encouraging students to prioritize their creative choices over the tool's suggestions. To that same end, I believe Digital Humanist educators should teach students to develop a provocateur relationship with GenAI tools.

Establishing a Provocateur Relationship to Support Human Creativity

Discussing Architecture, Kyle Steinfeld proposes three relational models between humans and GenAIs—actor, material, and provocateur (Steinfeld, 2021).

GenAI as an actor is when the human artist initiates the creative decisions, and the GenAI performs as if it were an actor on a stage. It acts as a surrogate for a human director, reflecting or elaborating at local or global levels. This director-actor relationship is a Posthumanist approach.

GenAI, as a material, frames AI technologies as a new medium for expression. Creatives and practitioners seek to master GenAI to shape these tools to become experts in its use as a craft.

In this instance, the relationship might be Posthumanist or Digital Humanist, dependent upon the directionality of the creative intentions. Much like clay, algorithmic systems can resist the intentions and efforts of those seeking to shape them.

Lastly, and for me most importantly, a provocateur relationship with GenAI can be recognized by an “acceptance of a machine-generated artifact as a point of departure that mobilizes, or a catalyst that propels a larger creative process.” (Steinfeld, 2021) A provocateur relationship encourages students to dismiss some or all the tool's suggestions in preference for their creative choices (Denning, 2023). For example, a student might provoke the GenAI tool to help it generate a character that exhibits traits of an overbearing parent. Upon reviewing the tool’s product, the student might reject the generated characteristics but may adopt the form in which the AI presented them as a constructive structure for portraying character traits. Joshua Vermillion (2023) discusses what can be viewed as a provocateur relationship,

> "Trying to communicate to a computer in plain English, as it turns out, can be a very long but satisfying exercise of trial and error, all the while developing more and more descriptive language and generating uncanny results.”

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Vermillion discusses how, with each engagement, each provocation with the GenAI, his language shifts as he seeks to realize a creative vision. Only by provoking the tool in different ways can the "most interesting results […] subvert our preconceptions, forcing us to look at our own ideas in very different ways, and extending our imaginations."

Choosing, accepting, and rejecting GenAI outputs from different prompts as an AI provocateur can help students understand the underlying computational models generating the content. When the same patterns frequently occur—whether in content, structure, or form—the way the generative systems of AI work becomes more transparent. Understanding these patterns allows the creative student to use them intentionally in their processes. Fostering this capacity to identify and analyze these patterns helps students maintain their SoA and autonomy. Further, it helps ensure their work aligns with their creative agency instead of a computational agency (Corazza, 2017).

Identifying a Sense of Agency (SoA) to Support Creative Autonomy

To teach students how to assess their creative agency, they should consider their general SoA. Lin, Agarwal, and Riedl visualize a conceptualization of the design space of human-to-AI mixed-initiative co-creativity (Lin et al., 2023). This visualization is below in Figure 4. The design space is divided into human and (AI) agent-initiated agency, elaboration and reflection, and local versus global (Lin et al., 2022). The first aspect, human and agent-initiated agency, addresses which entity enacts a creative decision; it focuses on directionality. The second aspect is elaboration versus reflection. Reflection addresses whether the AI tool can generate communications or content related to previously generated content. For example, "See if you can make the plot more exciting." Elaboration is about instructing the entity to take a new action. For example, "Explain what the character does next" (Lin et al., 2023, p. 3). The last aspect, global versus local, addresses whether a creative change needs to address all of the generated content (global) or details (local).

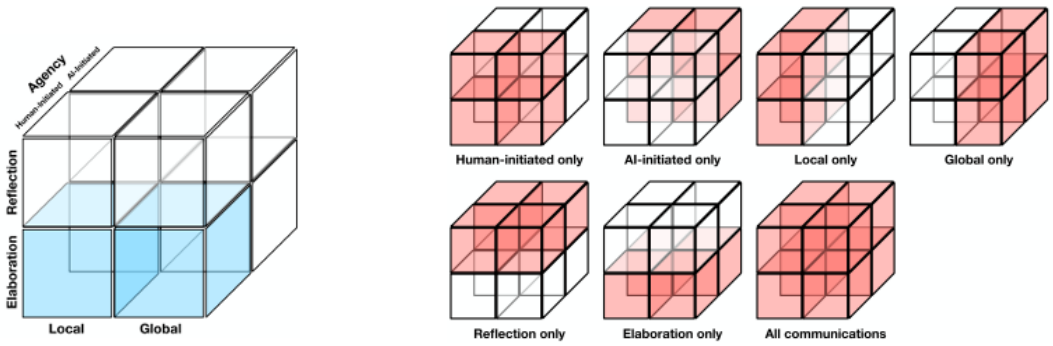

Figure 4: Lin et al., (2023) conceptualize the design space for mixed-initiative co-creative relationships with AIs. On the left, each dimension of the design space is spatially rendered. How these dimensions overlap in different relationships is highlighted on the right to clarify the dynamic.

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A student can reflect on their SoA by considering where a creative decision came from (human vs. agent-initiated), how content is created (reflection vs. elaboration), and the scale of the change (global vs. local). When establishing a provocateur relationship with an AI tool, a student might assess the content of a communication after initiating a creative choice and seek elaboration or reflection at the appropriate level.

Critically, the directionality of reflection and inquiry is always one way. From a Digital Humanist perspective, the agency of creativity is situated with the human artist. As part of the clear establishment of human agency, students need to practice prompt engineering.

Prompt Engineering to Impose Human Creative Steps on AI Processes

Prompt engineering is a technique that shapes human-initiated inputs to provoke a GenAI tool to produce specific and intended outputs. Students can embody Digital Humanist values in different forms of prompt engineering, such as Chain of Thought engineering (Wei et al., 2022). This approach asks creators to externalize their creative process in clear, replicable steps for the GenAI to follow, consequently emphasizing human influence over GenAI. For example, a student might prompt a GenAI in this manner.

> You are a Young Adult fiction writer developing a new character. You are in your mid-thirties and live in the Midwest outside of a big city. You love solar punk and other ecocritical narratives but are working on a horror story. The story takes place in an exurb community of manufactured homes. You are generating a sketch of the protagonist. These are the steps you will take to develop your character.
>
> 1. Consider the demographics of people who live in exurb communities in the Midwest.
> 2. Identify stereotypes or generalizations about the environment.
> 3. Identify the characteristics of people who live in those communities.
> 4. Consider common backstories for individuals in those communities.
> 5. After reviewing all of the information, analyze it, and based on the analysis, create a sketch of a character who represents a person most relatable to a Y.A. audience, has endearing characteristics, and has the most common backstory.
>
> For each of the above steps, provide your final considerations and two alternatives, and explain how you arrived at those choices.

In this instance, the position, role, and steps the GenAI should follow are directly stated. These steps mirror that of the human author seeking to create the work. This list could be more granular, including references to other material with which the author has engaged. For example, the second prompt might be revised, “When considering stereotypes or
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generalizations for the environment, please consider *A Sand County Almanac* by Aldo Leopold," if the author had recently read and been inspired by the book. By including these specific details in the prompt, the human creator hews the AI's generative processes closer to their human agency.

The last part of the prompt serves the provocateur relationship. By asking for the AI tool to generate alternatives, the creative student is given more than one option to consider. They enter a curatorial process and engage their critical curiosity. In their consideration, they may notice the patterns used by the AI and identify how to build upon them. The second aspect of the prompt gives the student insight into why the GenAI tool made its choices.

Explainability is a core component of trust in GenAI and human relationships (Shin, 2020, 2021a, 2021b). Upon reviewing the transcript, the student can respond critically by rejecting, modifying, or building from the explanation in a different direction. In each instance, the creator's human agency is elevated.

Courses can also expand on prompt engineering that upholds human creativity by teaching students how to train their GenAIs tool on their own creative content. For example, the University of Michigan has a tool that allows faculty, staff, and students to upload their data sets into a proprietary GenAI system connected to OpenAI and Azure. By utilizing their creative work with prompts that align with their individual approach to creative processes, students can learn how to elevate their productions without ceding their agency or intentions.

This provocateur approach supported by personal data expands the creator's creative reach and nurtures their style through reflection on the AI's generated expressions. For example, in Eryk Salvaggio's class, "Critical Topics: AI Images," students collected 500 to 1000 of their pictures and used them as a personalized data set for an extended version of StyleGAN2 to create a custom generative model (Salvaggio, 2023). The extended model and the data set are developed through human creative agency and represent the student's creative work.

Creators and artists can use foundational data models, which include pre-weighted data. These models have data already labeled for use by a GenAI.

The transformer architecture can often not be modified, but artists can fine-tune the results.

A writer could take their previous five years of writing, train the foundational model on that data, and then fine-tune the results so that the generated stories match their tone, style, and voice.

Encouraging students to focus on using their creative process and work as training data and prompts helps them prevent their deployment of GenAI in a manner that overshadows or exploits the labor of other creative humans. Digital Humanism requires students to be actively transparent in using GenAI and how their tools source their training data (Abid et al., 2021; Kim et al., 2022; Navigli et al., 2023). Such transparency holds students accountable for what they create through GenAI and how the products were made. It also teaches them to uphold human dignity and the creative

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labor of writers, artists, musicians, and other creatives. At the very least, this involves students citing the GenAI tools used and what prompts they entered to produce their work.

The Benefits of a Digital Humanist Approach

A Digital Humanist approach balances technological advantages with preserving human creative agency. It is not a Luddite approach. This approach recognizes the necessity of adopting and utilizing new technologies. Still, it does not do so from tech-deterministic or techno-chauvinistic perspectives, which only entrench structural and systemic injustices that dehumanize. Instead, Digital Humanist educators work to establish and clarify the appropriate creative relationship with GenAI that supports the well-being of all. Achieving this kind of relationship involves a concerted effort to "shape technologies in accordance with human values and needs instead of allowing technologies to shape humans" (Werthner et al., 2019).

Creating art, stories, and music is a central human value and need. As educators, ownership of the creative process, an integral part of the human experience, must be elevated for students. As discussed in the 2019 *Vienna Manifesto on Digital Humanism*, "Universities are the place where new knowledge is produced and critical thought is cultivated."

As scholars and educators, we must emphasize human influence and originality in creative and intellectual processes. As part of new curricula, students must be taught the importance of intention, directionality, mode of creative expression (reflection and elaboration), and the scale of those dimensions. With this knowledge, a student can begin to assess and understand their SoA in any creative process with an AI tool. Such an awareness is necessary to maintain their agency.

Creative students must be taught how to use prompt engineering and their data to establish a prosocial and productive use of GenAI tools.

As we navigate an increasingly AI-influenced world, educators play a crucial role in maintaining students' creative autonomy while confidently using, critiquing, and regulating these advanced tools. The Digital Humanist approach can foster this thoughtful interaction with GenAI and prepare students to participate in the development of a digitally enhanced and humane society.

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