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GPT and Me, An Honest Reevaluation:

The Dawn of Co-active Emergence

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ABSTRACT

This essay explores the transformative concept of co-active emergence in education, where human and machine intelligence synergize to enhance learning experiences. It discusses the integration of AI in doctoral research, emphasizing collaborative efforts between humans and AI to push academic boundaries. It also addresses the challenges and ethical considerations of AI, advocating for a balanced approach that leverages AI's capabilities without compromising educational integrity, ultimately proposing a dynamic, interactive academic environment enriched by technology.

KEYWORDS

co-active emergence, AI integration, doctoral research, machine learning, academic integrity, interdisciplinary analysis, constructivism, academic self-efficacy

Welcome to the dawn of co-active emergence in education, a transformative learning paradigm where human intelligence and machine intelligence converge on purpose to amplify and enrich a shared experience. This concept is not merely about using technology as a tool; it is about creating a symbiotic relationship where Artificial Intelligence (AI) and human insights interact dynamically, each pushing the other towards greater discoveries and deeper understanding. The newly coined term *co-active emergence* tries to describe a collaborative, interactive involvement (co-active) coupled with the natural development of ideas and solutions (emergence). As we stand at this juncture, it is crucial to acknowledge the inherent challenges—such as biases in AI training data and machine algorithmic decisions, which are often beyond the end user's control. These issues are important to acknowledge, yet they represent initial hurdles that we are collectively learning to overcome, as well as influence for improvement.

As a matter of process, this editorial essay endeavors to examine extant theory using the document analysis methodology, and thereby offer an analysis of excerpts from three significant texts authored in earlier years of the Internet Age. These books grapple with ideas and concepts about thinking and learning with computers: *Transforming Technology*: *A Critical Theory Revisited* by Andrew Feenberg (2002); *The Children's Machine: Rethinking School in the Age of the Computer* by Seymour Papert (1993); and *Using Technology Wisely: The Keys to Success in Schools* by Harold Wenglinsky (2005). When reexamined in the current context of generative and collaborative computing processes, it is possible to repurpose these texts to show their relationships and relevancies to today's engaging problems. By highlighting key passages from these earlier works, it is also possible to establish a continuum of thought and provide commentary to help alight possible paths for PK-20 educational leaders, paths that have been present for many years. "The truly challenging question for those of us who advocate a constructivist role for educational technology is this: What is the value-added of the technology above and beyond good teaching?" (Wenglinsky, 2005, p. 9). In the realm of graduate education, particularly in doctoral research, co-active emergence represents a shift from an intellectually vibrant process pursued in solitary with human advisors to a collaborative one with both human advisors and machine companions.

AI does not replace human effort but co-evolves with it, enabling students and professors to explore complex ideas and data through a more holistic and nuanced lens, or better yet, a few full sets of lenses. "Instead of reducing individuals to mere appendages of the machine, computerization can provide a role for communicative skills and collective intelligence" (Feenberg, 2002, p. 89). By confronting the obstacles head-on, professors pave the way for a future where academic rigor is enhanced and the boundaries of educational achievements are redefined, despite the naysayers pointing to current limitations. By leveraging AI, we can envision a classroom and an educational approach where traditional passive teaching and learning, transactional processes, transition into an active (even better, co-active) exploration of knowledge.

This approach aims to foster not only deeper intellectual engagement but also cultivate students who are highly motivated to regain more agency in their own individual processes of learning. Relying on the computer to teach the student and calling it "computer-aided instruction" belittles the possibilities and undermines a deep learning process of students programming computers, through which they could "both acquire a sense of mastery over a piece of the most modern and powerful technology and establish an intimate contact with some of the deepest ideas from science, from mathematics, and from the art of intellectual model building" (Papert, 1993, p. 216). For decades, the role of computers in education was primarily seen as enhancing the speed and efficiency of traditional methods. However, with the advent of

Large Language Models (LLMs) and Generative Pre-trained Transformers (GPTs), computers now fulfill roles once relegated to the realm of science fiction, actively participating in the creative and intellectual processes of learning. If we continue with the 1980s model of a computer kiosk in the corner of the classroom, we will once again miss the opportunity to empower students and enhance their experiences.

Co-active emergence is here and possible, and we must commit to figuring it out together. It may be of service in this undertaking to use the phrases “machine learning” or “machine intelligence” rather than “artificial intelligence.” This terminology reflects that the intelligences exhibited by machines is not purely artificial but is rather generated as a function of processing human data. These systems, trained on human inputs and designed to generate human-like responses, facilitate an ongoing dialogue that enriches human-machine interaction. This distinction in terminology is a desire to move away from negatively connoting the GPT output as fake or “artificial,” and instead to recognize the computational power unique to machines. In the context of co-active emergence, this interaction is not just supplementary but central, harnessing a powerful synergy between abstract human thought and extensive empirical data. This dual emphasis ensures that the use of technology enhances rather than replaces the intellectual rigor that is the hallmark of academic pursuit.

CHALLENGES OF INTEGRATING AI IN EDUCATION

As we try to embrace co-active emergence, we must navigate the challenges it brings, particularly the biases inherent in AI from training data and algorithms. Overcoming these is not instantaneous but a gradual process involving enhanced transparency, the use of diverse data sets, and the active inclusion of varied human perspectives in AI development. “Computer design thus involves a choice between two different conceptions of the relation of rational systems to human action and between two corresponding conceptions of what it is to be human in a technological society” (Feenberg, 2002, p. 9). By implementing algorithmic audits and fostering an ethic of continuous improvement, the educational community can mitigate these biases, though perhaps never remove them. Maintaining a realistic criticism of the machines gives professors the opportunity to engage without compromising their principles. GPT is not our overlord. In fact, it serves humans and can serve as the ultimate sounding board, which becomes even more focused and original when the human user trains the GPT with his own original human compositions.

Standardizing the use of one LLM/GPT at the university will help maintain consistency in the replies and dialogues as well as in the perpetual training of the LLM. This continual training of models has now become the obligation of PK-20 educational leaders, even if they decline the work, since most of what we have previously read and studied is currently part of the globally available LLM training. But since this is all terribly new and not likely to initiate rapid change, particularly in larger colleges and universities, some specific undertakings can and should commence. Early adopters have begun to develop repositories of resources that can be put to use right away: California State University at Sacramento has created a National Institute on Artificial Intelligence in Society and University of Michigan has created the Michigan Institute for Data and AI in Society. University leaders may wish to consider those bodies of work and build local tools of their own.

Writing AI ethics coursework in a collaborative manner with professors, students, and machines will prove quite useful. An inquiry-based active research methodology woven into a seminar designed to provide professors and students with some guardrails, questions, and considerations for integrating AI and AI ethics ought to happen at every campus. This is the sandbox needed to co-construct what is the next right move for each campus culture. Unfortunately, we have instead seen outright bans of AI, which ignores the dialogue off campus and devalues the intellectual potential of co-active emergence.

Using and improving AI will come no matter what, but why not participate and add our thumbprints to the machines? This would directly address current limitations and pave the way for an improved AI in education with fewer inherited biases from previous versions. “If used in a constructivist fashion, it is a useful tool; and if used in a didactic fashion, it is worthless, or even destructive” (Wenglinsky, 2005, p. 10). AI bias, AI hallucinations, and AI errors, oh my! Letting the programmers, developers, and managers be the only ones with their hands in the batter does not best serve education, let alone humanity. We cannot put LLMs and GPTs back in the bottle, but we can take an active role as professional educators to form working groups tasked with studying, testing, documenting, discussing, and suggesting how to change the tools and how to use them in ways that promote intellectual growth, fairness, and diversity.

Integrating Computers (again) into Classroom Practice

Anyone reading this will certainly know that the integration of computers and the Internet in academia has long been normalized. Beyond digitizing paper documents and increasing search capabilities, the computational models available via software approaches to digesting large volumes of words and seeking concordances quickly became an essential relationship between human and machine in academic pursuits. While the human mind is endlessly creative and intuitive and intelligent, the machine intelligence adds the potential to quickly look across huge swaths of text and numbers with the purpose of finding trends that the human eye could not possibly see. Further, when working across multiple documents and datasets, the physical space needed to lay out paper across the room in an organized way is just not practical.

Humans certainly notice trends or have hunches when studying data. Seeking verbal concordances and numerical trends across hundreds if not thousands of pages of work, however, is work for computers. Articulating those ideas and then training computers to help read and look for those ideas has long been an exciting notion, and now we can celebrate this camaraderie as it develops into practice. If doctoral candidates discussed their hunches and brainstorms with faculty advisors, no doubt they would together compose a more refined perspective that could be of even more use to their work with a computer seeking concordances among large data sets. The relationship of doctoral candidate and advisor is also celebrated and an essential, irreplaceable part of academic study. Interestingly, ethical dynamics of personal interactions do not receive the same scrutiny as those of students, or even faculty, having discussions with GPTs to further their own productivity or effectiveness in their academic pursuits.

Quite likely the hesitation and fear that academia is experiencing in entertaining the use of GPTs as a constructivist tool has more to do with not wanting to make it even easier for students to walk down the well-trodden road of cheating and plagiarism–and that is a fair concern to directly address. Examining the multi-faceted relationship between technology, academia, and the evolving definition of intellectual partnership will no doubt continue through the ages, but right now the birth of GPT demands that we meet the moment to define and design a meaningful symbiosis.

Now, it would be disingenuous to claim that computers have been integrated into the learning environment as seamlessly as books, blocks, and beakers. Many educational institutions at all levels still resist fully embracing technology, even going as far as preventing computers from being accessible to their students. This time around, though, it might be different. LLMs and GPTs are the tools that were envisioned decades ago but not yet possible for widespread use: “How would the introduction of Knowledge Machines into the School environment compromise the primacy with which we view reading and writing–that is, children’s fluency in using the alphabetic language” (Papert, 1993, p. 9)? Now that we are here, the predetermined learning outcomes of traditional pedagogy quickly become irrelevant when we accept the Knowledge Machine. That file cabinet of prepared units and lessons and exams should just be fed into the Knowledge Machine. It is no longer all that your students need.

IT'S ALL ABOUT ATTENTION AND TRANSFORMATION

With the advent of the high-stakes exam was born the cheater. For a variety of reasons from nefarious to anxious, cheating and testing go hand in hand. And if there will be admissions and matriculations and placements based on grades and examinations, we will face these kinds of challenges. Resting the blame on computers for students cheating, however, is just as silly as blaming on your boots the faults of your feet. The tool does not create the behavior, the conditions and the culture do that. The tool is only something to use for good or for evil. But what choice will you make and why? The current culture about computers in the classroom is not much different from the one that has dominated four decades of microprocessor and computation development, one of wariness and worry with little adoption or adaptation other than to speed up the dissemination of paper curricula, increase the use of plagiarism checkers, and run an electronic gradebook. Building with our new computational tools all sorts of new types of assignments and assessments (and classrooms and courses) is literally the uncharted territory into which some educators will willingly venture. But how shall we do that?

If knowledge is the consequence of experience, then our first move is to engage professors and graduate students in courses that provide them with opportunities to interface with GPTs in meaningful ways. Throwing caution to the wind does not work and when professors have had the chance to use GPTs as part of their own learning experiences, they will become more likely to use them when teaching students. For as much as the research nudges and forecasts what could or should happen in classrooms, and for all the excitement that an on-campus professional development workshop generates (perhaps that is a sarcastic comment for some professors), the practice most often relied upon by teachers is the one with which they are most familiar: traditional pedagogy. Currently, just a few institutions in the USA are willingly embracing the wobbly and yet-to-be-defined space that academia and GPT hold together. With thousands more colleges and universities to join (eventually, because they will no doubt have to as the tools become better and comfort grows), a vision for humans working with GPTs as quasi-intellectual peers has necessitated an ethical and honest reevaluation of our roles and work.

The vision could look like something like this: Above all, human discernment is crucial. People still must read and think and talk and write. It might seem ridiculous to state it in an academic vision, but computational models are currently capable of doing those tasks that were once strictly human. Therefore, everyone in academia must read, think, talk, and write on their own and with GPTs. The work with GPTs, though, must intentionally focus on formulating queries that direct AI to reveal patterns and trends, enabling a rich comparison between the human eye's “hunches” and the machine’s “findings.”

The work with GPTs should also focus on commentary about human-created compositions and ideations. More “what do you think of this in relationship to. . .” and less “write an essay for me about . . ..” When we use GPTs this way we transform the computer into a companion collaborator complementing our skills, interests, and human potential. Traditional academic skills that humans have honed for decades can and should survive and persist as part of leveraging computational models (the machines would not be so capable if humans had not developed those skills), and our dual emphasis promotes deeper intellectual rigor rather than replaces it.

A vision for academia plus GPT lays out a plan for students and faculty to extend their capabilities and expand their critical thinking process. It is a balanced partnership where AI serves as an ally, co-active emergent partner, in developing human insight with technological advancement. This is not a copy/paste model, this is a purposeful and fostered dialogue between the human and machine to elevate the research process.

The approach suggested here moves beyond the sort of AI use cases that are already mainstream and more transactional in nature, like personalized language learning software, or chatbot tutors, or virtual teaching assistants. Instead, co-active emergence invites professors and students and machines to enter a collaborative dialogue in pursuit of knowledge.

POSSIBLE SCENARIOS OF CO-ACTIVE EMERGENCE

Imagine a doctoral student researching the impact of socioeconomic status on educational achievement. By employing AI to analyze large datasets from various school districts, the student uncovers not only correlations between school funding and student performance but also nuanced patterns related to parental engagement and extracurricular participation. This analysis goes beyond traditional statistical methods, incorporating machine learning algorithms to predict future educational outcomes based on current trends. This iterative process of hypothesis and verification exemplifies the co-active emergence, where human insight and machine intelligence combine to explore complex societal issues, offering a deeper, more comprehensive understanding that could influence policy and practice—maybe even venturing into new

academic territories, resulting in discoveries that neither human nor machine could achieve alone.

Another scenario might involve a doctoral student in educational technology developing a customized learning platform with AI. This platform adapts in real-time to the needs of students with disabilities by analyzing their interaction patterns and learning preferences. The AI suggests adjustments to the curriculum that are dynamically tailored to improve individual learning outcomes, showcasing the potential of personalized education supported by machine learning. Those suggestions are then titrated and moderated by the doctoral student. A project of this sort could develop further into a longitudinal study enhanced by literature reviews summarized and keyword tagged by the machine in service of a self-study of the student-created platform.

Students are no longer data-miners; they are data-navigators, steering the course of inquiry with AI as their compasses, uncovering insights that might redefine their fields. “New forms of sociability could emerge that would become a medium for democratic self-organization.” (Feenberg, 2002, p. 92). AI becomes not just a tool but a collaborative agent in the creation of new knowledge, challenging and extending human intellect in the realm of doctoral research.

AI in academic research that intentionally uses the co-active emergence approach will change thinking and learning forever. Students and AI can collaborate to extend the boundaries of human knowledge, leveraging AI’s computational power to explore data-rich environments and extract meaningful insights. This partnership, far from replacing traditional research methods, enhances them, providing doctoral students with the tools to conduct more effective, innovative, and impactful research. This is not just data analysis; it is a co-active emergence of insights, where students interact with AI to interrogate and understand the nuances within their research data. This method transforms the often-solitary research process into an interactive, co-creative dialogue with technology, making the daunting task of literature review and data interpretation a dynamic interplay of human and machine intelligence. “The workforce of the twenty-first-century values independent decision making, complex problem solving, teamwork, and ongoing performance appraisal—all components of a constructivist, not a didactic pedagogy” (Wenglinsky, 2005, p.15). Very few places of work now and in the future will be without some form of computerization, LLM, and GPT. Furthermore, that which can now be conceived and achieved is very different from previous decades. We do not yet know the extent of our human cognition and imagination when supercharged with this computational power and vastly extensive database archive.

CHALLENGES OF ENGAGEMENT AND RIGOROUS INTELLECTUAL EFFORT

While the potentials of AI in enhancing academic rigor and exploration are significant, we must also confront the uncomfortable reality that not all educational settings are currently primed to harness these advancements. In some academic circles, there is an observable deficit in engagement and a resistance to adopting new methods, which could potentially dampen the effectiveness of integrating sophisticated tools like AI. This is not just a technological challenge but a cultural one.

The introduction of AI and machine learning in educational contexts risks being perceived as a pathway to reduced intellectual effort—where the allure of efficiency might overshadow the necessity for deep, critical thinking. In settings where pedagogical practices have not evolved to incorporate active, inquiry-based learning, there is a genuine concern that these tools could be misused to “automate” thinking rather than enhance it.

However, dismissing AI’s potential due to these challenges would be akin to ignoring the transformative power of the printing press because of initial fears about its impact on learning. Instead, this scenario calls for a renewal in teaching, learning, and researching methodologies. “Using technology wisely in schools involves more than just training students to be proficient with technology; it requires the integration of technology into the curriculum in ways that transform the learning process” (Wenglinsky, 2005, p. 23). Professors must not only adapt to new technologies but also actively shape their use to foster a culture of deep engagement and rigorous intellectual activity. This involves recognizing and addressing instances where reliance on AI might encourage surface-level engagement with complex topics. It also requires a commitment to professional development and continuous learning, ensuring professors are not just adopters of new technologies, but informed, critical users who can model deep engagement and intellectual curiosity for their students.

By embracing AI as a tool that requires careful, thoughtful integration into academic educational and research practices, we can mitigate the risks while amplifying the benefits. “Technology use in education can certainly speed up our use of paper and how we process and access information. However, replacing paper simply maintains things as they are. For decades, the machine has had the potential for more uses than yet discovered” (Feenberg, 2002, p. 181). Directly incorporating the teaching of ethics, critical thinking, and co-active emergence will ensure that AI serves as a catalyst for intellectual growth rather than a crutch that supports educational complacency.

CONCLUSION: EMBRACING AI AS AN ACADEMIC PARTNER

Using AI with the intent to deceive undermines both human and machine. Recognizing GPTs’ potential as collaborative tools requires a shift in perception and to see them as partners in a dialogue that enhances human effort. Co-active emergence is the new natural process at the heart of working in earnest with GPTs. Leveraging technology to expand rather than limit educational horizons no doubt will foster new thinking about literature reviews and data sets, as well as copyright, fair use, and even student recruitment. Each day the world grows older, the children grow younger. Students entering the university in the year 2042 may very well not attend schools that do not allow work with a GPT.

As AI approaches the capability of independent research, the academic community must confront whether scholarship will—or even should—revert to a pre-AI paradigm. Ethical engagement with a GPT is also rooted in our understanding of the interplay between human and AI thought processes and must become a cornerstone of academic integrity, thus requiring new guidelines and coursework. The intent behind one’s AI usage is crucial and demands clear articulation in academic honesty policies. Technology’s transformative role in teaching and learning highlights this double-edged techno-sword of enriching and endangering our commitment to thinking itself. Educating students about the highest ethical value of a GPT companion is to educate them about its best use. The

entire enterprise of treating this “talking box” as a trusted companion in our serious high-minded endeavors demands an honest reevaluation of how we work and what motivates our ongoing academic pursuits.

From imitation to innovation: computers have evolved beyond kiosks for programmed curriculum and rote learning, now bringing with them both doom and delight for doctoral and academic discovery. This perspective invites us to consider the dual potential of AI to both enhance and compromise academic integrity. Leading educational institutions have begun to formalize partnerships with AI developers, and the slow trot towards AI adoption in academia is poised to accelerate into a sprint. A rigid ban on AI contradicts the principles of progressive education thereby stifling innovation and open access in favor of gatekeeping.

Time to evolve! Time to immerse! Time to engage! You are ahead of the curve, and the whiplash on adopting AI and co-active emergence will swiftly come. So go ahead and give your favorite GPT a nickname because it is time for you two to get to work.

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