2025, Volume 10, Issue 2

From curiosity to collaborations: Planning teacher education classes with AI

Sudha Swaminathan
Eastern Connecticut State University

It started as a whim, a quick thought, just a curiosity to try the new tool myself. I am of course referring to AI, specifically ChatGPT. After my first humorous trial a few summers ago (the first vignette below), I was not immediately hooked. But I was titillated enough to keep playing with AI. In this narrative, I reflect on the journey of my growing friendship with AI through three select vignettes. I share my own conflicting but co-existing feelings of skepticism and delight, along with the reactions of my students.

For context, my professional background is in early childhood teacher education at a liberal arts institution, where, for the last 25 years, I have been teaching preservice teachers about educational technology, math, and science pedagogy.

First Attempt: To Break Out of My Ennui

My first dalliance with AI was for my summer course on educational technology in early childhood education. I review and update this course's content every single year, but there is one element that I have never changed. I start each class session with a poem and cohesively build all learning experiences around it. Week 1 starts with Robert Frost's "The road not travelled*"* and we use this metaphor to explore uncommon applications of educational technology (such as the broken key use of the calculator); Week 2 takes on Kahlil Gibran's "Fear*"* to tackle transforming curriculum with hitherto unfamiliar pedagogy (such as coding with tangible robots for interdisciplinary content).

Year after year, students enjoy the metaphors borne in the poems, but I have been getting weepingly tired of the same poems. So, I hopped into ChatGPT and asked for 'appropriate poems for a course on educational technology.' Split second later, I got responses: Christina Rossetti's "I'm not a robot" and Valerie Cox's "The computer swallowed grandpa." Cool, I thought, but realized another split second later, when the same AI apologized for making up the first poem and twisting the second from another version. I laughed out loud and spent the next few (no, several) minutes playing with ChatGPT, teasing it to elaborate more, hoping for both humor and insights.

In this instance, I ended up staying with my original cluster of poems but shared my venture with AI openly with my students. What ensued was a fruitful conversation on hallucinations and approaching AI with a tinge of caution and the need for cross-checking.

Second Attempt: To Be Creative

My second (or the second significant) venture was for my science methods course where I needed to help my students master the Next Generation Science Standards (NGSS Lead States, 2013), at least enough to apply them in their lesson planning. The voluminous depth and breadth of the science standards, with detailed grade-level expectations, along with cross-cutting interdisciplinary concepts, are a boon to science education, but way too overwhelming for the novice teacher. In previous semesters, I have used scavenger hunts, spiral learning, and case studies, with varying success. This time, I wanted to do something a little more effective, a little more contemporary (both for myself and my students), something more creative. I just was not sure how.

Fortunately, around the same time, I attended a webinar on infusing creative thinking into higher education wherein the presenters shared a framework for integrating creativity (Burnett & Keller-Mathers, 2017). Their color-coded array of creative thinking skills, organized by types of application, appealed to my systematic mind. I readily integrated select skills (risk-taking, playfulness, alternative thinking) in my prompts to AI to develop an escape room. I specified that I wanted engaging activities for college students to independently explore the NGSS cross-cutting concepts with critical science content. 'Absolutely,' came the warm reply in a jiffy before churning out a charming plot about scientists lost inside a Curiosity Cave (AI's title). A series of additional prompts ensued, where I prompted AI to make it more oriented to early childhood, more precisely focused on the science content, to vary the activities by science processes, and much more. Finally, I received the framework for an escape room complete with a series of puzzles, ranging from a mystery bag, to discerning patterns in nature for clues, to observing a dying plant for its needs, and to deciphering a lab notebook. At my prompting, it provided authentic links for each puzzle, along with supporting hints. When it realized that I was happy with the escape room (it asked me if I was), it went on to ask if I would like a recording sheet (something I had queried in a different session) and even structured this recording sheet with open-ended statements (again, picking up from one of my earlier prompts about tapping into students' voices). In the end (after many other prompts that stretched across a good three hours), I felt quite good about what we had developed. Mind you, I say 'we' not because I did the heavy lifting on the creativity, but because it was genuinely collaborative.

Escape the Curiosity Cave was an immediate success with my students. They jumped into each puzzle eagerly, seeking and relentlessly scouring the science standards for clues. I set a time limit on the duration before they could access the hints. Interestingly and much to my delight, they collaborated with each other, preferring to get clues from their peers and helping everyone escape.

This time again, I shared my process transparently with my students, including how AI took less than a second to craft its response, but that I spent close to three hours finetuning my prompts, aligning them to my learning outcomes, adjusting to my students' developmental needs, and even revising a few incorrect statements. Without my asking, my students jumped in to joyfully create an escape room for their clinical placement children. Never have I seen such enthusiasm and determination to design and revise a lesson plan. Even more valuable for me was reading their prompts and re-prompts as a formative assessment of their grasp of the content/pedagogy.

Third Attempt: To Find Room for Additional Content

Soon after these early attempts, I started dabbling with AI almost on a weekly basis, always trying to see if I could make my instructional plans more creative. However, this third vignette that I share next had a different goal: To integrate additional content into a packed course. Squeezing in more content is rarely more learning for the students.

As a university-wide initiative, we have been invited to include the study of Sustainability Development Goals (UN-SDG, 2015) within relevant courses. Oft I went to my pal, AI, and queried how I might infuse SDG creatively. Amazingly (by this time, I should not be amazed, but I still was), it remembered my pedagogical stance, my focus on early childhood and my organizational preferences, to produce a response with concrete examples for learning with and about SDG. I received an impressive list of 18 application-oriented experiences such as the 'Water-Walk Challenge (SDG goal 6, Clean Water and Sanitation): Simulate a walk to fetch water using heavy containers—then discuss access inequality.' This list, organized under different strategies, helped me overlay relevant Sustainable Development Goals in my course, without burdening my original content.

Again, I shared my process with the students, including the original syllabus and the AI-improved one with SDGs. I (naively) thought students would find the comparisons interesting, but they only wanted to know what they had to do now (not what was done previously). I wished for them to see the capacity of AI to think big but also fit within the niche of a course. They appeared unfazed and a little bemused by my AI-excitement. Later, I reflected that working through exercises like my second vignette where they got to enjoy the activity as a learner and as a creator was rightfully much more meaningful for them.

What have I learned and what's next? AI makes for a nifty collaborator. Like a smart friend who knows my style and my strength, AI can tirelessly and creatively fill my gaps and needs. I have learned that I enjoy this type of class planning tremendously, even while acknowledging how all-consuming it is. I still double-check the content from AI, which further lengthens my planning time. Concurrently, I am determined that my students experience the same power of planning with AI.

What's next for me is more planning and playing with AI, knowing it will only get smarter. I also want to dig deep into my students' prompts to assess their learning and to adjust my instruction and perhaps include AI in these processes too.

References

Burnett, C., & Keller-Mathers, S. (2017). Integrating creative thinking skills into the higher education classroom. In C. Zhou (Ed.), Handbook of Research on Creative Problem-Solving Skill Development in Higher Education (pp. 283-304). IGI Global. Scientific Publishing. https://doi.org/10.4018/978-1-5225-0643-0

NGSS Lead States. (2013) *Next Generation Science Standards: For States, By States*. Washington, DC: The National Academies Press. https://doi.org/10.17226/18290.

UN-SDG (2015). *The United Nations Sustainable Development Goals (SDGs)*. https://sdgs.un.org/goals.