Brennan's Blog

GPT-3 ⇒ Post-Scarcity Education

GPT-3 is a few-shot language-generating API trained on an obscene amount of data by OpenAI; it's a glimpse of the future. And they have an API. Human-level language generation is here, and *anyone* can potentially get permission to use it. I applied this morning for access—what should I use it for?

One of the hardest problems in accessible education has been that of scaling dynamic explanations. People don't understand things after a single lecture, so those with means have historically paid BIG money to hire tutors. Being able, as a student, to ask someone about the things you don't understand in a 1-on-1 environment has been one of the most potent manifestations of economic privilege in the disparate distribution of quality education. I know firsthand: my parents hired a high school math teacher to give me two years' worth of content (Geometry and Algebra 2) in half a year of once-a-week lessons! For those keeping track at home, that's ~350 classroom hours' worth of content, covered in just over 25. 1-on-1 instruction, in my case, yielded more than an order of magnitude improvement in learning time over Prussian classrooms. I know it from the other side, too—my first income came through teaching Algebra 2 and precalculus to struggling high school students in turn.

If GPT-3 can be configured to adequately give nuanced, dynamic explanations of any named topic and respond to any follow-up questions, then this IS the key to tutoring at scale! It literally just has to be plugged into a website interface (as Mckay Wrigley has done here) and distributed. Right now, *tens of millions* of kids are *actively* struggling with learning content online, as we try to pretend "remote learning" is adequately done by moving the traditional classroom to Zoom. What if they could be exploring—even the same topics—by asking GPT-3 questions and getting instant, detailed, readable explanations?

Besides access, the biggest problem with tutoring is bandwidth. Sessions are typically only an hour or two long, one to three hours per week. And when those sessions happen, the student has to ask a question (or "about" a topic) and then sit there while the tutor thinks and talks in real time. Humans think and talk slowly. Also, it's hard for social reasons to interrupt or redirect or tell a tutor that they're not answering the question you asked!

And GPT-3 gives the tools to solve this problem extremely well. It generates paragraph-long explanations in seconds, which the pupil can scan or read deeply. They can backtrack, ponder a sentence, ask follow-up questions (even "off-topic"), and get instant and long responses. And it can be accessible 24/7 through an automated interface!

Imagine having a tutor who could explain just about any concept in existence in language you can understand. They respond instantly, and you can flit through their explanations at will—go forward and back, double over a line, or save *the exact thing you learned by hearing* for future reference. You could even trace the path of your understanding as it develops over time... OpenAI has created the tech necessary to implement Vannevar Bush's vision of the "memex", a problem at the nexus of computer science and education long thought near-impenetrable!

Oh, and they're awake and accessible 24/7/365. For (nearly?) free. It's official: personalized education, overnight, has transformed from being not only scalable to being post-scarcity.

- If you don't like an explanation, click "refresh" for a new one and get it instantly.

- If you don't learn from an explanation, ignore it and move on or ask clarifying questions (there's no social pressure to pretend you got it).

- If you hear about an interesting topic, start learning it in seconds.

Imagine trying to justify Prussian education (our current system), with its classes, lectures, tests, and year-long choreographed fake "learning" if you have access to this technology (which you DO, remember, if you're reading this) to use yourself or give to teenagers.

What will the physical and organizational context of education—schools—need to look like in a future enabled by this technology? I already knew it was a pressing problem, but holy crap—I thought this kind of thing was still at least two decades out. Simultaneously, GPT-3 gives us two things: a virtual guarantee that 90%+ of human jobs will be annihilated within a decade

(remember, this is an *exponentially improving* technology), and the keys to a radically new education that can prepare our young people for the unimaginable world of 2050.